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THESIS

OFFICER AND ENLISTED RETENTION BEHAVIOR
UNDER ALTERNATIVE RETIREMENT PLANS

by

Ralph Miller Rikard, Jr.

December 1980

Thesis Advisor:

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Results indicated substantial sensitivity of retention propensities to alternative retirement systems. Junior officer and enlisted retention propensities under proposed alternative retirement plans were generally as good or better than current indications. An alternative retirement system can very well yield a future increase in the total officer and enlisted population base and have substantial impact on force structure.

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Officer and Enlisted Retention Behavior⁻
Under Alternative Retirement Plans

by

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Submitted in partial fulfillment of the
requirements for the degree of

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I. INTRODUCTION

A. THE PROBLEM

The military retirement program, often considered the most valuable fringe benefit to military personnel, has been perhaps the most severely criticized element of the military compensation system. The passage of the Career Compensation Act of 1949 signifies the first Congressional recognition and definition of a military compensation system. Defined as base pay, subsistence and quarters allowance, and future retirement annuities, the military compensation system has been continuously evaluated and amended since its inception during the post World War II era.

The First Quadrennial Review of Military Compensation (QRMC), initiated by Congress in 1966, found that retirement provisions provided neither equity to the member nor management effectiveness for the government [Ref. 1]. The President's Commission on Military Compensation (PCMC) reported in 1978 that retirement practices were costly and inefficient and that the current retirement program which allowed retirement at one-half base pay after 20 years service could no longer be justified [Ref. 2]. Military retirement costs have increased dramatically in recent decades and are projected to reach 11.5 billion for Fiscal Year 1980 [Ref. 3].

The perceived problems of an inefficient and costly retirement system will continue to attract close scrutiny and investigation during the 1980's. Alternatives to the present system such as contributory retirement plans, retirement plans offering early vesting priveledges, and two-tier annuity retirement programs have already surfaced in Congress. Resolution presumably lies in either proving that the existing retirement program is more cost effective than any feasible alternative or identifying the most efficient alternative system of those under consideration.

The general problem of cost effectiveness is certainly a major concern, particularly within the scope of present and future limitations in defense spending. Analyses and investigations of alternative retirement plans can not, however, be restricted solely to narrow cost concepts and budgetary limitations. The selection and institution of an alternative retirement plan should not be accomplished without taking into consideration its impact upon personnel retention and total force manpower requirements. The present military retirement system is usually perceived by service personnel a primary career incentive. The enactment of a new retirement system based entirely upon a narrow cost analysis without prior consideration of changes in personnel retention patterns may have disastrous effects on total force size and stability in the future.

B. PURPOSE

The purpose of this thesis is to investigate the effects of several possible replacement retirement plans on an individual's expressed propensity to remain on active duty. The selected retirement plans exhibit similiar provisions contained in alternative retirement systems recently proposed and discussed at the Department of Defense and Congressional level. The primary objective will be to demonstrate and compare the intended retention of individual sample groups both under the current retirement plan and after exposure to one of the alternative retirement plans.

C. STRUCTURE OF THE THESIS

Chapter II presents a general literature review and includes historical discussion and background of the current military retirement system as well as comments concerning proposed retirement reform measures. Landmark events in military retirement systems are traced from the pre-Revolutionary War era through recent legislation in the 1970's

Chapter III addresses source data, sample techniques, statistical procedures, and the methodology utilized throughout the analysis phase. Discussion includes database definition and the selection procedures for individual sample groups. Demographic characteristics such as age, time in service, and education level of each aggregate sample group are also identified with descriptive statistics. Chapter III additionally includes a detailed description of each alternative retirement

plan and the specific analysis procedures utilized to determine their effect upon an individual's propensity to remain on active duty.

Results of the analysis are presented in Chapters IV through VIII. The retention impacts of each alternative retirement system are tabularized and significant differences between segregated groups are compared. Appropriate tables and graphic illustrations are also presented in each chapter.

The final chapter offers a summary discussion of each retirement proposal in relation to the retention propensity of each sample group. This chapter additionally provides comments concerning future policy recommendations and continued research in retirement plan analysis.

II. SURVEY OF LITERATURE

A. MILITARY RETIREMENT

U.S. military retirement practices date back to the Revolutionary War when one-half pay for life was promised to officers remaining on active duty until the end of the war. A form of disability retirement was also instituted in the late 1770's, providing half pay for both officers and enlisted disabled in the line of duty [Ref. 4]. These provisions later expired and few significant developments affected either military compensation or retirement until the early Civil War years.

From 1821-1861 there was no non-disability retirement plan in effect. Since many officers serving on active duty could not qualify for disability retirement yet were not fit to remain on active duty, the "physical incapacity due to age" concept evolved. Legislation in 1851 confirmed this concept and established voluntary retirement at full pay and allowances for Army and Naval officers serving a minimum of 40 years [Ref. 4]. The time-in-service requirement was later reduced to 30 years in 1870. This legislation also set the pension annuity formula equivalent to two and one-half percent of base pay for each year of service, with a maximum of 75 percent basic pay receivable for 30 years service [Ref. 5].

Changes in retired pay were linked to increases or decreases in active duty pay from the late nineteenth century through 1921. This practice, referred to as Recomputation of Retired Pay or RECOMP, was temporarily prohibited by the Joint Services Pay Act of 1922 [Ref. 6]. RECOMP was again utilized from 1926 until 1958 when Public Law 85-422 permanently halted the practice. This legislation was viewed as a significant setback by retired personnel in that it permitted the erosion of retired pay by inflation. The passage of the Uniform Services Act of 1963, which linked adjustments of military retired pay to changes in the Consumer Price Index (CPI), remedied this problem [Ref. 7].

The structure of the military retirement system experienced few changes throughout the 70 years following the Civil War. Although the existing retirement system was extended to enlisted personnel in 1885, no major structural changes occurred until the 1930's. In an effort to reduce the World War I surplus of officers, the Army, in 1935, reduced the retirement time-in-service minimum to 15 years [Ref. 5]. By 1938, 20 years had become the traditional and acceptable retirement eligibility standard in the Navy. This policy of retiring after 20 years service was formally established with the enactment of Public Law 305 in 1946 and is still in effect today [Ref. 8].

The Career Compensation Act of 1949 concluded the first major overhaul of the military compensation system. Since

then, the military retirement system has remained virtually unchanged with the exception of variations in the computation of periodic pay increases. The present system allows voluntary retirement after 20 years service. Service members accumulate two and one-half percentage points per year of service. This accumulated percentage is later applied to base pay in the form of a multiplier, allowing a maximum annuity of 75 percent of basic pay for 30 years service.

The calculation of retired pay has been severely criticized during recent years. The retirement pay "inversion" phenomena is a situation which occurs when inflation encourages larger increases in retired pay than active duty pay, and which often results in earlier retirees receiving more retirement pay than later retirees receive [Ref. 77]. This situation was avoided by the RECOMP procedure until 1958. The pay inversion problem was especially prevalent between 1969 and 1976 when periodic cost of living adjustments were additionally boosted by an extra one percent "kicker" to compensate for administrative lag time [Ref. 77]. This provision was repealed in the 1977 Defense Appropriations Bill and Congress had since provided legislation to counter the inversion problem. Retirement pay is now increased by law in March and September based on CPI changes from previous six month periods.

B. RETIREMENT REFORM

An examination and review of past retirement reform measures is necessary to acquire adequate insight and understanding of

the potential effects of alternative retirement systems. Recent retirement plan proposals reflect both the rationale and the direction for change in the near future. The alternative retirement systems presented in this thesis contain many of the structural characteristics debated at the Department of Defense and Congressional level.

Several alternative retirement systems have emerged as proposed reform measures during the last decade. The following discussion relates important characteristics of and differences between each plan. A comparison of the structure of alternative retirement systems is also presented in chronological order in Figure 1 [Ref. 2].

Figure 1 - SUMMARY OF PREVIOUS RETIREMENT RECOMMENDATIONS

Retirement Provision	First Quadrennial Review (1969)	Interagency Committee (1971)	Retirement Modernization Act (1972)	Defense Manpower Commission (1976)
Years for immediate annuity	20	20	20	30 for most (20 to 29 for some)
Form of annuity	Two step	Two step	Two step	Level
Social Security integration	Yes	Yes	Yes	No
Income Base	High 1 Salary	High 3 Basic pay	High 1 Basic pay	High 3 Basic pay
Vesting	No	Yes (at 10 years)	Yes (at 10 years)	Yes (at 10 years)
Severance pay for officers and enlisted persons	Yes	Yes	Yes	Yes

Figure 1 cont., - SUMMARY OF PREVIOUS RETIREMENT RECOMMENDATIONS

	President's Commission (1978)	Two Tier (1978)	SECDEF (1979)
Years for immediate annuity	Trust Fund payable at 10 years	20	20
Form of annuity	Level	Two step	Two step
Social Security integration	Yes	Yes	Yes
Income Base	High 3 Basic pay	High 2 Basic pay	High 2 Basic pay
Vesting	Yes (at 10 years)	Yes (at 10 years)	Yes (at 10 years)
Severance pay for officers and enlisted persons	Yes	Yes	Yes

The First Quadrennial Review of Military Compensation (QRMC) was completed in 1969. In a published five volume report, the study found that existing retirement provisions lacked management effectiveness and efficiency. Specific findings criticized the current retirement system on the basis that it motivates voluntary retirement from the military organization soon after retirement eligibility is achieved, that the present separation of the Social Security and military retirement formulas and benefits makes the Social Security annuity an inefficient compensation tool for the military organization and results in inequitable treatment of members, and that basing retirement annuity on the retirement date wage level also results in inequitable treatment of members and creates force management problems [Ref. 17].

This study resulted in recommendations differing compensation and retirement policies between various levels of service. The recommendations in the area of retired pay were strikingly similar to the provisions of the Retirement Modernization Act subsequently developed and sent to Congress as an Office of the Secretary of Defense (OSD) legislative proposal. The basic features called for vesting of the retirement contributions of members, to be returned if the member should leave service prior to retirement; an increasing retirement annuity multiplier for service beyond 20 years; calculation of retired annuity on the basis of the "high year" average salary rather than on the terminal active duty salary; and,

finally, an offset in the Social Security annuity based upon the proportion of that annuity attributable to military service [Ref. 1].

These policy recommendations for change in the military retirement system were never acted upon due to a desire to move towards an All Volunteer Force. They nevertheless served to set the course for ensuing years, and have directly or indirectly served as the basis for all compensation changes enacted since 1968 [Ref. 6].

The Interagency Committee (IAC) and the Retirement Modernization Act (RMA) are similiar proposals, both preserving the basic structure of the current system by providing an immediate lifetime annuity after 20 years service [Ref. 2]. These measures maintained the primary characteristics of the existing system by providing adequate income in old age and attractive incentives to remain on active duty. Utilizing a two-step annuity in which a lower annuity is provided for some period after leaving active duty followed by an increased annuity at an older age, these proposals were criticized for career force management inflexibility and viewed as ineffective retention incentives for non-careerists. Although vesting privileges provided transitional income, significant disparity still remained for those leaving before and after 20 years service. Congressional action failed to enact these measures in the early 1970's and they have not been resubmitted since.

The Defense Manpower Commission (DMC) recommended a military retirement system based on a distinction between combat and support personnel. In direct contrast to previous reform measures, DMC concluded that eligibility for retirement was unwarranted for all members of the force who completed 20 years service [Ref. 9]. Thirty years of service was recommended as the normal retirement age, except for personnel who spent a full career in combat duties who would be allowed to retire after 20 years. Retirement eligibility was based on acquiring 30 points (one point per year for non-combat billets; one and a half points per year for combat duties) [Ref. 9].

This measure also included severance payments and vesting privileges after 10 years service. Severance payments were applied only to those leaving with 30 or more years service or those involuntarily separated from active duty. Although not officially acted upon as legislation, the DMC proposals were submitted to the President's Commission on Military Compensation for review and consideration.

The President's Commission on Military Compensation was established to review the work of prior study groups and to propose recommended changes in the military compensation system [Ref. 2]. This Commission reviewed findings of the Third Quadrennial Review of Military Compensation (QRMC) and the DMC, as well as other findings submitted by the Congressional Budget Office (CBO) and the General Accounting Office (GAO). Specific areas designated for review were the purpose

and design of the military retirement system, military pay standards, differential payments, and the feasibility of military compensation as a salary system Ref. 2.

Concluding that the current system was no longer justified, the Commission recommended a new contributory retirement plan which would provide a retirement annuity for old age needs, deferred compensation in the form of a trust fund, and severance pay to assist in civilian life adjustment Ref. 2. These recommendations were designed to encourage longer careers and to reduce the temptation to retire at 20 years. These proposals, submitted to the President in 1978, were quickly countered by several internally generated DoD recommendations formulated to maintain the current 20 year retirement.

The Two-Tier retirement annuity plan was strongly supported by Army and Air Force personnel Ref. 6. The SECDEFF plan served as a compromise between PCMC proposals and recommendations generated within DoD. Although differences existed in the computation of annuity payments, similarity was maintained in basic structure and intent to support a 20 year retirement option. The framework of the SECDEFF plan was designed to reduce lifetime earnings of 20 year retirees, to make a 30 year career profitable, and to provide an increased compensation for those leaving prior to 20 years completed service Ref. 6.

Numerous retirement reform measures of varied structure and differing features have been submitted since the First

Quadrennial Review of Military Compensation in 1969. However, none of these proposals has been fully legislated or implemented at present. The only notable change in the current military retirement system was the recent passage of legislation affecting the retirement annuity formula. The calculation of retired pay will now be based on the three highest consecutive years basic pay, rather than on terminal year base pay as in the past [Ref. 10]. Grandfathered for those presently on active duty, this measure serves primarily to reduce the cost of future retirement payments.

C. FORCE BEHAVIOR UNDER ALTERNATIVE RETIREMENT PLANS

As previously noted, past retirement plan analysis has primarily concentrated on budgetary costs impacts with little emphasis on personnel retention implications. Some of the most recent analysis has been accomplished by the Navy Research and Development Center, San Diego, California (NPRDC). Several completed studies have proposed analytical methods which may serve as potential predictors of both cost and force behavior under alternative retirement systems. One such model developed by NPRDC utilized dynamic programming techniques and the Navy enlisted force. This model proved significantly predictive of enlisted retention and continuation rates based on length of service, occupational groupings, and the present discounted value of the difference in returns between remaining in the military and retiring or leaving for civilian employment prior to retirement [Ref. 11].

This thesis does not attempt to forecast enlisted and officer retention behavior but to analyze intended retention trends and propensities under several possible alternative retirement systems. These plans contain many of the possible features and characteristics of both past and future reform measures. Chapter III presents these alternative retirement systems in addition to specific thesis methodology and analysis techniques.

III. METHODOLOGY

A. CONDUCT OF THE STUDY

The 1978 DoD Survey of Officers and Enlisted Personnel is one of a series of interrelated data collection efforts of the Rand-DoD Survey Group [Ref. 12]. One of the objectives of this research group is to examine and to provide policy sensitive information on the military life cycle. This cycle encompasses both reserve and active force enlistment decisions, career orientations, responses to policies which affect military members and their households, and decisions to leave the military.

One of the primary purposes of the 1978 DoD Survey of Officers and Enlisted Personnel is to provide the military Services with data that can be used for active force policy and research purposes. It is the only survey administered to personnel in all Services from which valid statistical inferences can be drawn concerning the total military population. This survey is conducted infrequently; previous surveys being administered in 1971, 1973, and 1976. It is the sole vehicle for collecting statistically representative data across Services and draws interest from a wide variety of potential users. Interest has been expressed by researchers who plan to use the survey as the primary data collection effort for major research issues such as retention, promotion,

and retirement, as well as information about single items of interest in the specific policy areas of health, readiness, and race relations.

The survey was designed to be administered in four questionnaire variants (two officer and two enlisted), and to encompass two types of data collection. The first data collection effort involves information that can become useful only if collected repeatedly. These data can provide indicators of the changing characteristics and orientations of the men and women in the Armed Forces. The indicators can be used to monitor the long-term effects of military personnel policies in the areas of housing, medical care, benefits, etc. Data would also be collected in identical form in subsequent DoD-wide personnel surveys.

The second form of data collection is oriented toward a single time analysis to evaluate specific policies, options, or research issues such as rotation policies and compensation. Issues in these areas will change over time and thus do not require time history data. The design of the survey assumes that similar data collection would take place at regular intervals.

The sample design of the survey was based on analytical requirements, historical response rates, and an administrative model that used existing Service channels. The basic stratification variable for the 1978 DoD Survey was service. The enlisted samples were stratified by years of service (YOS)

and the officer samples by grade and sex. For enlisted personnel within two of the YOS groupings (0-4 and 5-8 years), there was an additional stratification by time remaining in enlistment contract (time to ETS). Supplemental samples of the enlisted women and blacks were also selected to allow for special analysis.

"The sample design required a total DoD-wide sample size of 54,000 completed and useable questionnaires, 500 of which were for all sample cells, except in two cases. The analytical design for Form 1 requires 1,000 completed and useable questionnaires from those respondents who are within one year of ETS and who have had between five and eight years of service. In addition, supplemental samples of enlisted females and blacks were required to produce a total of 500 useable questionnaires from each Service for each of these groups" Ref. 12. The nine cells that resulted from the enlisted stratification are shown in Table 1; the five cells in the officer samples are shown in Table 2.

Table 1*

SAMPLE STRATIFICATION OF ENLISTED PERSONNEL

Sample Cell	Years of Service	Years to ETS ^a
1	0 to 4	≤1
2	0 to 4	>1
3	5 to 8	≤1
4	5 to 8	>1
5	9 to 12	
6	13 to 16	
7	17+	
Supplemental Sample ^b		
8	Additional females	
9	Additional blacks	

^aEnlistment term of service

^bBoth females and blacks are included in the first seven sample cells. Supplemental samples were drawn to ensure a statistically significant number of them for specific analyses.

Table 2**

SAMPLE STRATIFICATION OF OFFICER PERSONNEL

Sample Cell	Sex	Grade
1	Male	0-1, 0-2
2	Male	0-3
3	Male	0-4
4	Male	0-5, 0-6
5	Female	0-1 to 0-6

** (From Zahava, Grissmer, Hawes, Hutzler; 1980, reference 12)

B. THE SAMPLE

This thesis, investigating enlisted and officer retention behavior under alternative retirement plans, is restricted to Navy respondent data only. The 1978 DoD Survey samples of Navy enlisted and officer respondents were utilized for analytical research. The aggregate samples consisted of 9,240 enlisted and 5,012 officer respondents. Enlisted and officer samples were initially stratified by grade and rank to identify logical groupings based on similiar job responsibilities, billet assignments, and service experience. In addition to senior enlisted personnel (E7-E9), both junior enlistee and officer respondents were also combined respectively (E1-E3 and O1-O2) to facilitate homogeneous divisions for analysis. Table 3 presents aggregate sample size distribution by enlisted and officer respondents. Descriptive statistics and characteristics for each sample division are also provided in Tables 4 and 5.

Stratification by race and sex (black/white and male/female) was accomplished when possible. Subsamples were also formed to investigate urban/rural differences when sample sizes allowed. Exceptions were the officer samples which contained too few blacks for statistical analysis, and the senior enlisted and officer grades (E7-E9 and O5, O6), which did not contain an adequate number of females for additional categorization. Specific sample size distributions are provided later in the analysis.

Table 3
AGGREGATE SAMPLE DISTRIBUTIONS

AGGREGATE GROUPS/ENLISTED	n
E1 - E3	1314
E4	1784
E5 - E6	4805
E7 - E9	1337
	<u>9240</u>

AGGREGATE GROUPS/OFFICER	n
01 - 02	1343
03	1413
04	1179
05	722
06	355
	<u>5012</u>

Table 4

ENLISTED SAMPLE CHARACTERISTICS

E1-E3 (1314)	\bar{x}	s
Age	20.6	3.2
Years Education	12.2	0.9
Months Active Duty	25.0	22.2
E4 (1784)	\bar{x}	s
Age	22.6	4.3
Years Education	12.6	1.1
Months Active Duty	48.9	19.0
E5-E6 (4805)	\bar{x}	s
Age	27.6	4.4
Years Education	12.8	1.3
Months Active Duty	89.4	41.2
E7-E9 (1337)	\bar{x}	s
Age	36.4	4.3
Years Education	12.7	1.4
Months Active Duty	209.8	48.3

Table 5
OFFICER SAMPLE CHARACTERISTICS

01 - 02 (1343)	\bar{x}	s
Age	25.6	2.9
Months Active Duty	43.2	34.8
03 (1413)	\bar{x}	s
Age	29.7	3.8
Months Active Duty	86.2	46.6
04 (1179)	\bar{x}	s
Age	36.3	4.6
Months Active Duty	155.0	57.4
05 (722)	\bar{x}	s
Age	41.5	3.5
Months Active Duty	233.9	53.8
06 (355)	\bar{x}	s
Age	46.8	3.7
Months Active Duty	295.1	54.8

The structure of the DoD Survey Forms, discussed below, also enables the comparison of officer and enlisted retention propensities under identical alternative retirement proposals. To facilitate this comparison, separate officer and enlisted samples were reconstructed from the original data bank using length of service (LOS) categories as sample divisions. Where earlier analysis is conducted within officer and enlisted classifications, respectively, this procedure is an attempt to directly compare officer and enlisted retention propensities with the exclusion of any existing rank, grade, and billet differences. Length of service categories and sample sizes are presented when appropriate.

The two Survey Questionnaires also permit respondent classification and retirement plan analysis by the type of place each respondent was living at 16 years of age. Separate analysis by geographic environment may also reveal significantly different trends or propensities to remain on active duty under various retirement proposals. Three divisions of the sample were constructed for officer and enlisted personnel, classifying respondents by large city (over 250,000), medium-sized city (50,000 to 250,000), and small city or town (under 50,000). Each sample classification includes the outlying suburb areas, and small city or town also includes farm or rural residence. Officer and enlisted sample breakdowns are listed in subsequent analysis presentations.

C. THE ANALYSIS

The 1978 DoD Survey of Officers and Enlisted Personnel is divided into four forms, two each for officer and enlisted respondents. The enlisted forms each propose a different alternative retirement plan. The officer forms describe a third alternative retirement system and also duplicate one of the retirement plans proposed in the enlisted survey. Enlisted respondents were exposed to Retirement Plans A or B while officers considered Plans B or C. The three alternative retirement proposals are illustrated in Tables 6 through 8.

Each retirement plan offers an annuity for ten or more years vested service. Retirement Plans A and C propose lump sum or severance bonuses upon departure and prorated retirement annuities receivable between the ages of 55 - 65. The size of the severance bonuses, the amount of annuity received, and the age benefits begin depend upon actual years service completed. Both plans are identical except in the amount and rate of increase of severance payments. Payments under Retirement Plan C begin at a higher level and also increase at a faster rate for additional years service. Bonuses range from \$8,000 to \$64,000 for Plan A and from \$16,000 to \$140,000 under Plan C.

Retirement Plan B excludes severance bonuses but includes a portion of base pay receivable as an annuity immediately upon retirement for 20 or more years service. This is in addition to increased annuities receivable after age 60.

Table 6

RETIREMENT PLAN A*

Years of Service	Amount of Lump Sum Bonus You Would Receive at the Time You Retired	Amount of Basic Pay You Would Receive as Retirement Benefits	Age When Retirement Benefits Would Begin
Less than 10	\$ 0	0%	None
10	8,000	20.0%	65 years old
11	10,000	22.5%	65
12	12,000	25.0%	65
13	14,000	27.5%	65
14	16,000	30.0%	65
15	20,000	32.5%	62
16	24,000	35.0%	62
17	28,000	37.5%	62
18	32,000	40.0%	62
19	36,000	42.5%	62
20	40,000	45.0%	60
21	43,000	48.0%	60
22	46,000	51.0%	60
23	49,000	54.0%	60
24	52,000	57.0%	60
25	54,000	60.0%	60
26	56,000	63.0%	60
27	58,000	66.0%	60
28	60,000	69.0%	60
29	62,000	72.0%	60
30	64,000	75.0%	55

*From the 1978 DoD Survey of Officers and Enlisted Personnel, Enlisted Form 1.

Table 7
RETIREMENT PLAN B*

Years of Service	Amount of Basic Pay You Would Receive as Retirement Benefits From the Time Retired Until Age 60	Amount of Basic Pay You Would Receive as Retirement Benefits After Age 60
Less than 10	0%	0%
10	0%	25.0%
11	0%	27.5%
12	0%	30.0%
13	0%	32.5%
14	0%	35.0%
15	0%	37.5%
16	0%	40.0%
17	0%	42.5%
18	0%	45.0%
19	0%	47.5%
20	25%	50.0%
21	27%	52.5%
22	30%	55.0%
23	34%	57.5%
24	39%	60.0%
25	44%	62.5%
26	50%	65.0%
27	57%	67.5%
28	63%	70.0%
29	69%	72.5%
30	75%	75.0%

*From the 1978 DoD Survey of Officers and Enlisted Personnel, Enlisted Form 2 and Officer Form 4.

Table 8

RETIREMENT PLAN C*

Years of Service	Amount of Lump Sum Bonus You Would Receive at the Time You Retired	Amount of Basic Pay You Would Receive as Retirement Benefits	Age When Retirement Benefits Would Begin
Less than 10	\$ 0	0%	None
10	16,000	20.0%	65 years old
11	20,000	22.5%	65
12	24,000	25.0%	65
13	30,000	27.5%	65
14	36,000	30.0%	65
15	44,000	32.5%	62
16	52,000	35.0%	62
17	60,000	37.5%	62
18	68,000	40.0%	62
19	76,000	42.5%	62
20	84,000	45.0%	60
21	92,000	48.0%	60
22	100,000	51.0%	60
23	108,000	54.0%	60
24	114,000	57.0%	60
25	120,000	60.0%	60
26	124,000	63.0%	60
27	128,000	66.0%	60
28	132,000	69.0%	60
29	136,000	72.0%	60
30	140,000	75.0%	55

*From the 1978 DoD Survey of Officers and Enlisted Personnel, Officer Form 3.

The design of each survey facilitates the identification of an individual's intended length of service both before and after reviewing a proposed retirement plan. The research analysis was conducted utilizing an IBM 360 Computer and the Statistical Package for Social Sciences (SPSS) [Ref. 13].

Retention propensities were investigated for five major groups:

- enlisted respondents exposed to Plans A and B
- enlisted analysis by residence classification under Plan B
- officer personnel exposed to Plans B and C
- officer analysis by residence classification categorization under Plan B
- officer and enlisted comparisons by LOS categories under Plan B

Retention impacts for each of the five groupings were also investigated when sufficient sample sizes were available.

Length of service intent, as expressed prior to exposure to alternative retirement plans, was initially tabulated for each group. Sample subdivisions were then identified and a crosstabulation of intended years service after exposure to a proposed retirement plan was completed. Cumulative retention percentages (percentage of sample group intending to remain on active duty after x years service), were then computed and plotted. Figures 2 through 44 show these plots. These plots relate the retention and propensity to remain on active duty for each sample group both before and after exposure to a proposed alternative retirement system. The average number

of years service for each sample group is also indicated by the vertical dashed lines on each graph.

Statistical validation to support the indicated preference of one retirement plan over another was accomplished with a statistical test for comparing two means using a one-tailed test [Ref. 14]. The expected number of intended years service (\bar{X}) and standard deviations (s) were computed for the relevant group for each retirement plan. Tests for different retention propensities under alternative retirement plans were then conducted at the .01 level of significance.

An additional validation procedure was also tested with enlisted and officer respondents exposed to Retirement Plans A and B, and B and C, respectively. After respondents reviewed and indicated years intended service under a new alternative plan, they were subsequently directed to indicate their preference for either the new plan or the current retirement system. The validation test was accomplished by computing a positive or negative change in intended years of service under the new plan as compared to previous intentions, and then tabulating each respondents preference for one plan or the other. Results and discussion of this procedure are presented in later chapters.

IV. ENLISTED ANALYSIS - RETIREMENT PLANS A AND B

A. THE SAMPLE

This chapter presents results and discussion of indicated enlisted retention propensity under alternative Retirement Plan A as compared to B. As previously noted, the enlisted sample was primarily stratified by pay grade, with additional subdivisions by sex and race. Specific sample sizes for each partition are provided in Table 9.

B. THE RESULTS

Generalized findings for aggregate and subdivision groups are summarized as follows:

- 1) Using expected total number of years of service as the measurement standard, Retirement Plan A was preferred over Plan B by all groups except female E1-E3 respondents. (Figure 4)
2. In contrast to other major sample divisions, respondents in all E1-E3 samples preferred Plan B to A after 16 years of intended service. (Figures 2-6)
3. The longest expected length of service was consistently that of black respondents, regardless of pay grade stratification. (Figures 5, 10, 15, 18)
4. Prior to exposure to alternative retirement systems, substantial decreases in intended retention usually occurred coincident with the end of initial enlistment obligation time frames (enlistee obligations of four to six years). Retirement Plans A and B both tended to prolong this sharp decrease in intended retention until about the ten year point. (Figures 2 and 7)
5. The lower enlisted grades (E1-E4) demonstrated an increased intended propensity to remain on active

duty longer under both alternative retirement plans. Expected years service of 5.51 years under current conditions increased under Plans A and B to 10.00 and 9.10 years, respectively, for the E1-E3 aggregate sample. The E4 respondents indicated a jump from 6.91 years current intended service to 9.20 years service under either Plans A and B. (Figures 2-11)

- 6) Although all subdivisions of the higher grade respondents (E5-E9) preferred Plan A to B, fewer would enlist if the choice were to be made again. These respondents would also not remain on active duty as long as their current intentions indicate. E5-E6 aggregate sample retention propensity decreased from 13.62 expected years service to 12.03 and 9.13 years under Retirement Plans A and B. E7-E9 retention propensity also fell from 19.86 intended years service to 14.23 and 11.40 for Plans A and B. A notable exception was the trend for a higher percentage of female E5-E6 respondents to remain on active duty longer under Plan A. (Figures 12-16)
- 7) The white and black E1-E3 sample partitions did not demonstrate a statistically significant difference in expected years service between alternative Plans A and B. The largest demonstrated increase over current intentions of the lower grades prior to 20 years service occurs in the black and male subdivision samples. Increases of 700 and 600 percent over current intended retention propensities were noted at the eight year service point for blacks and males respectively. Percentage increases in retention propensities after 20 years service ranged from 1,000 to 1,500 percent. (Figures 3 and 5)
- 8) Differences in expected years service between proposed retirement plans are significant at the .01 level for all E4 sample divisions. Retention increases are also substantially lower for the E4 respondents. The largest increases in indicated retention propensities, excluding 20 years service and beyond, occurred in the female sample. Females indicated percentage increases over current intended retention propensities of 392, 260, and 230 percent for the eight, 12, and 16 year points respectively. As with the E1-E3 sample, a pronounced propensity to remain on active duty past 20 years is evident with percentage increase ranging from 300 to 1,200 percent above current indications. (Figures 7-11)

- 9) E5-E6 respondents preferred Plan A to Plan B although fewer persons would enlist again if presented the opportunity. Except for the black sample, positive percentage increases did occur beyond the 20 year point. Females also indicated a positive increase in retention propensity beginning at the eight year point under both alternative retirement plans. The lowest preference for either retirement plan was generally indicated by the white sample. (Figures 12-16)
- 10) The available E7-E9 samples followed trends identical to the E5-E6 samples, except that positive percentage increases did not occur at the 20 year point. Although there would be fewer enlistees, Plan A is clearly preferred to Plan B by those who would enlist again. Blacks also demonstrated a higher preference for both alternative retirement plans as compared to the white subdivision sample. (Figures 17-19)

All findings are presented in graphic form in Figures 2 through 19. Retention percentage increases and decreases for specific years under both alternative retirement plans are also listed in Tables 10 through 13. Each graph is coded to relate sample sizes, expected or average number of intended years service, and the results of retirement plan comparisons and hypothesis testing. An example of this procedure and format is illustrated below for Figure 2, page 48.

<u>Ret. Plan</u>	<u>Sample Size</u>	<u>Expected No. Intended Years Service</u>
A	656	10.00 years
B	658	9.16 years
CT(Current)	1314	5.51 years

Hypothesis tests were performed for each possible combination of retention propensities under current and alternative retirement plans. Differences in means between two retirement systems which were not statistically significant are annotated as such;

Plan A x CT : Accept H_0

to reduce complexity, and because the majority of hypothesis tests were significant at the .01 level, no additional coding is utilized to present this information.

Table 9

ENLISTED SAMPLE GROUPS AND SAMPLE SIZES

E1-E3	Plan A	Plan B	Total
Aggregate	656	658	1314
Male	474	462	936
Female	182	196	378
Black	210	249	459
White	446	409	855
E4	Plan A	Plan B	Total
Aggregate	1059	725	1784
Male	843	559	1402
Female	216	166	382
Black	248	209	457
White	811	516	1327
E5-E6	Plan A	Plan B	Total
Aggregate	2727	2078	4805
Male	2489	1884	4373
Female	238	194	432
Black	408	313	721
White	2319	1765	4084
E7-E9	Plan A	Plan B	Total
Aggregate	679	658	1337
Black	74	91	165
White	605	567	1172

Figure 2 - AGGREGATE E1-E3 INTENDED RETENTION PROPENSITIES

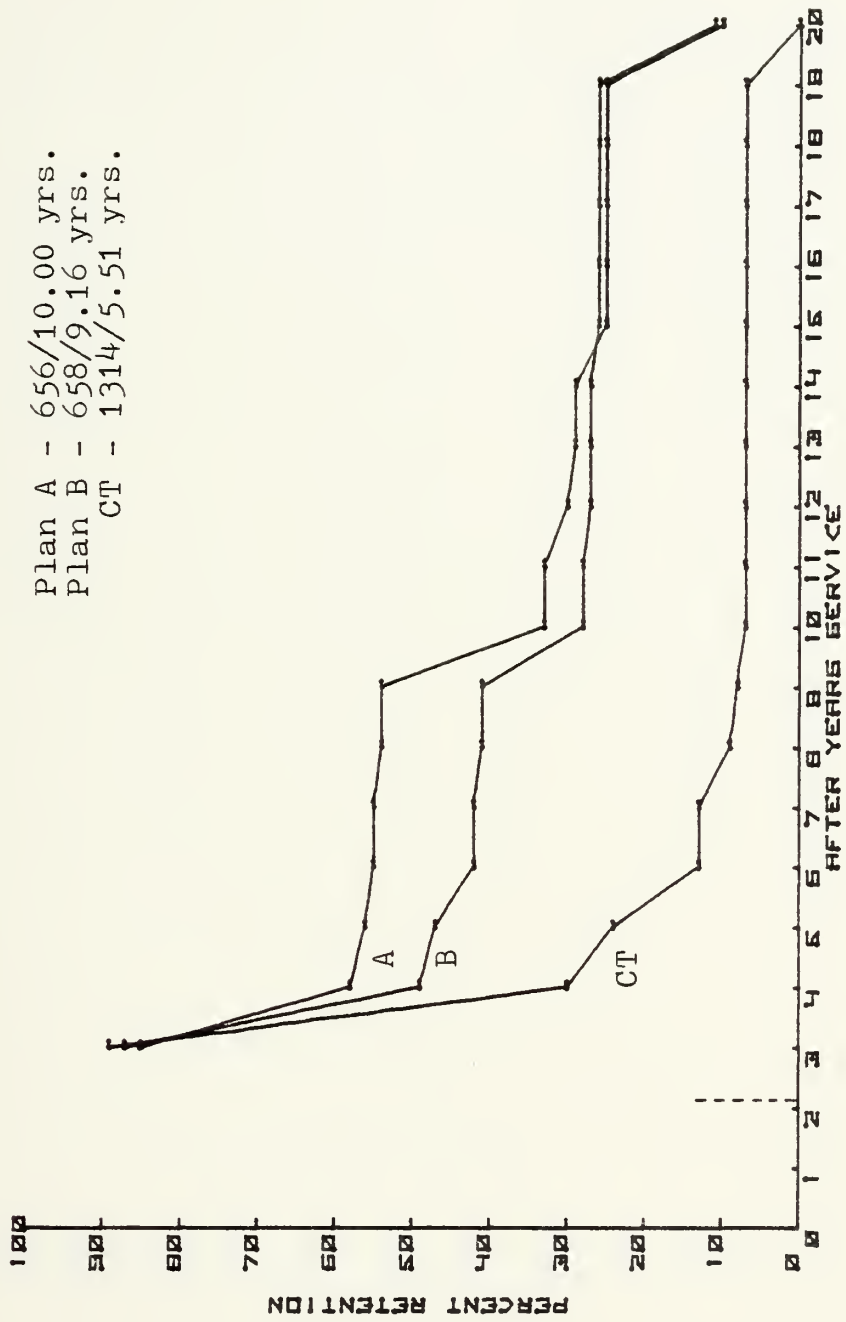


Figure 3 - MALE E1-E3 INTENDED RETENTION PROPENSITIES

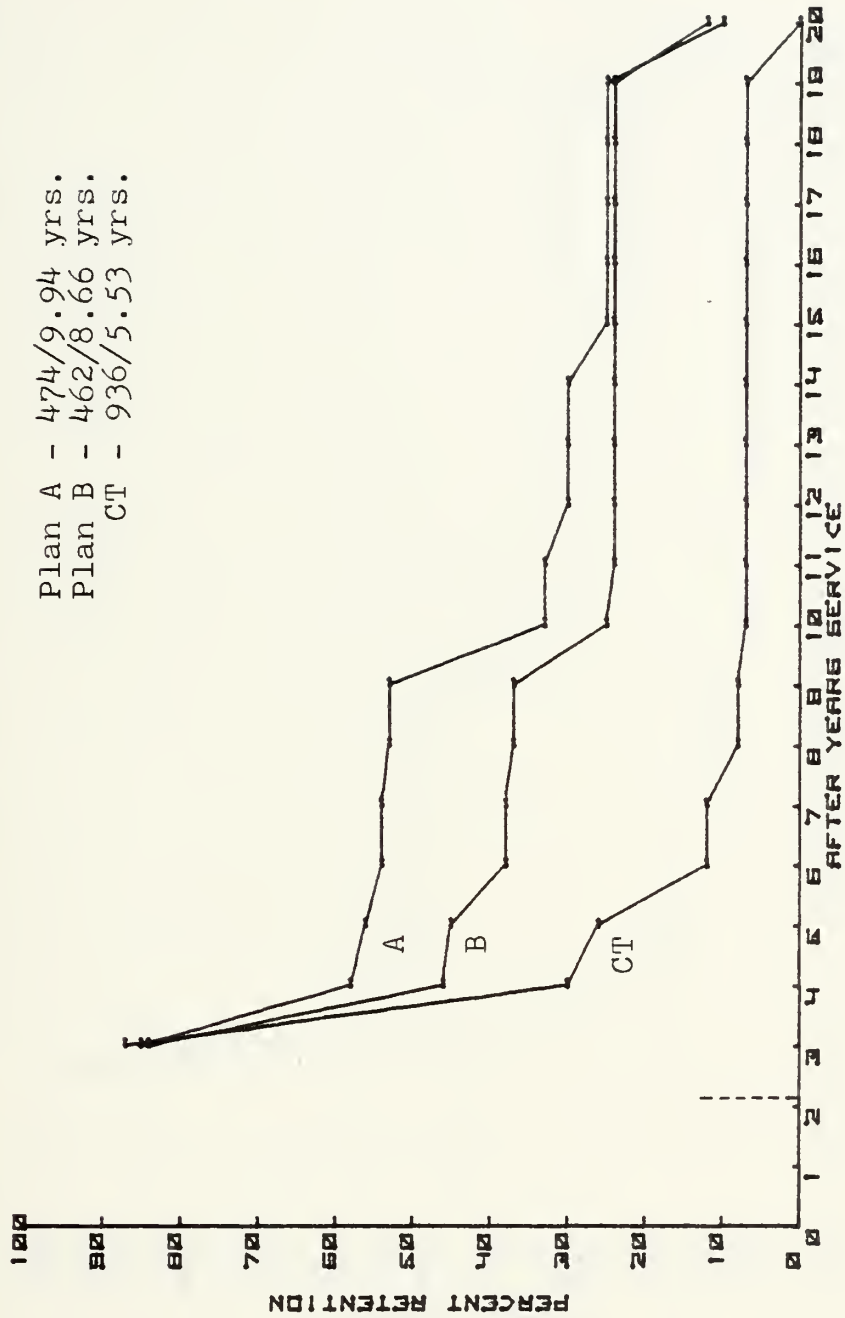


Figure 4 - FEMALE E1-E3 INTENDED RETENTION PROPENSITIES

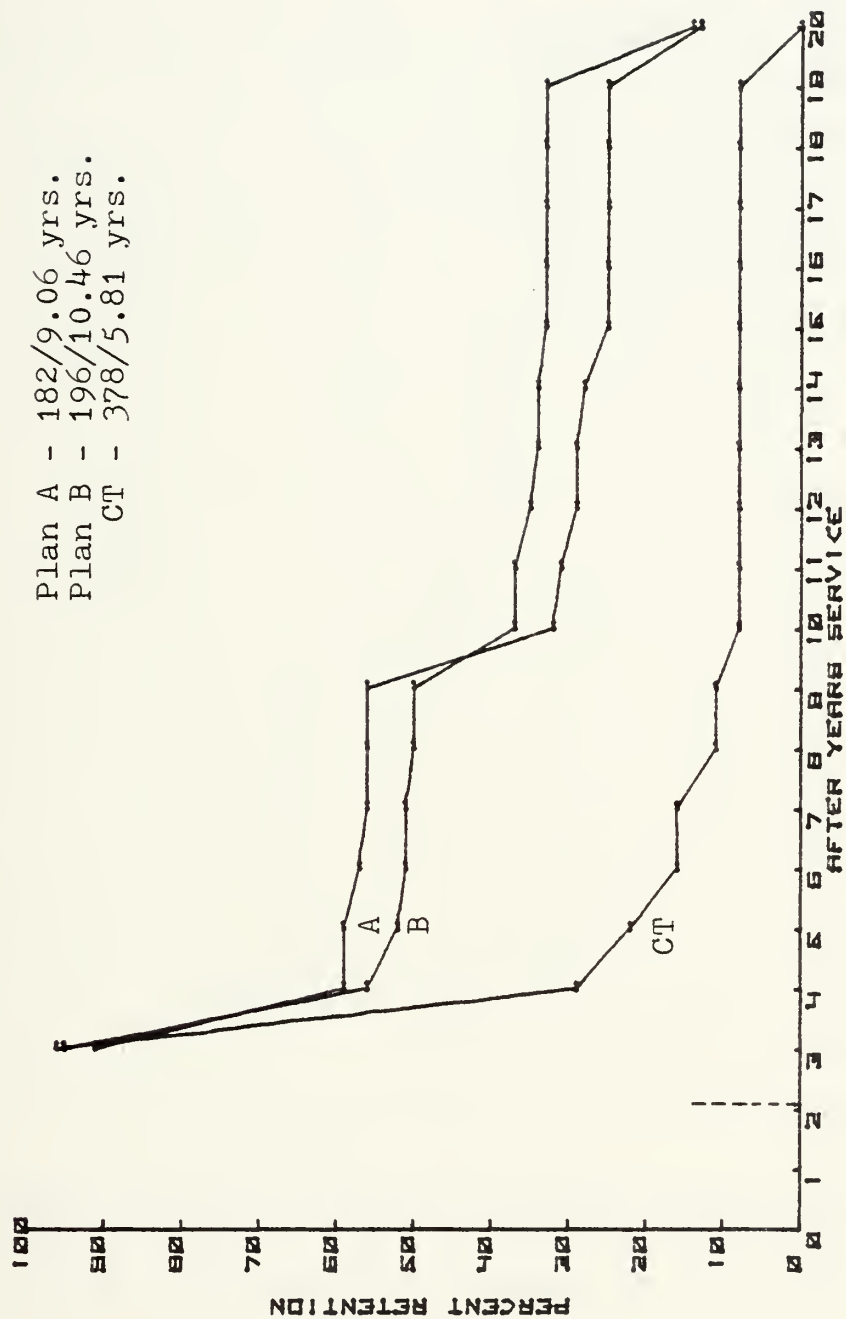


Figure 5 - BLACK E1-E3 INTENDED RETENTION PROPENSITIES

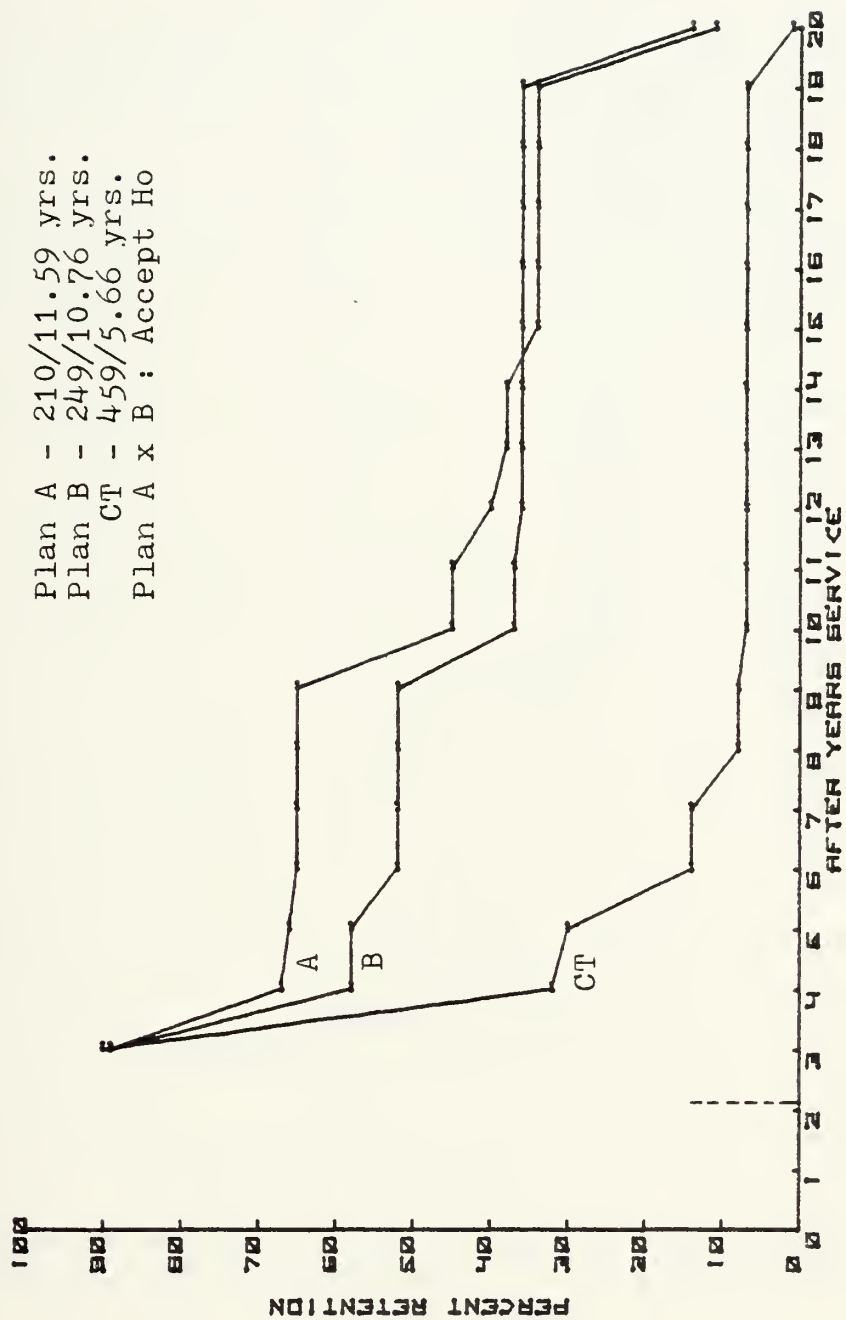


Figure 6 - WHITE E1-E3 INTENDED RETENTION PROPENSITIES

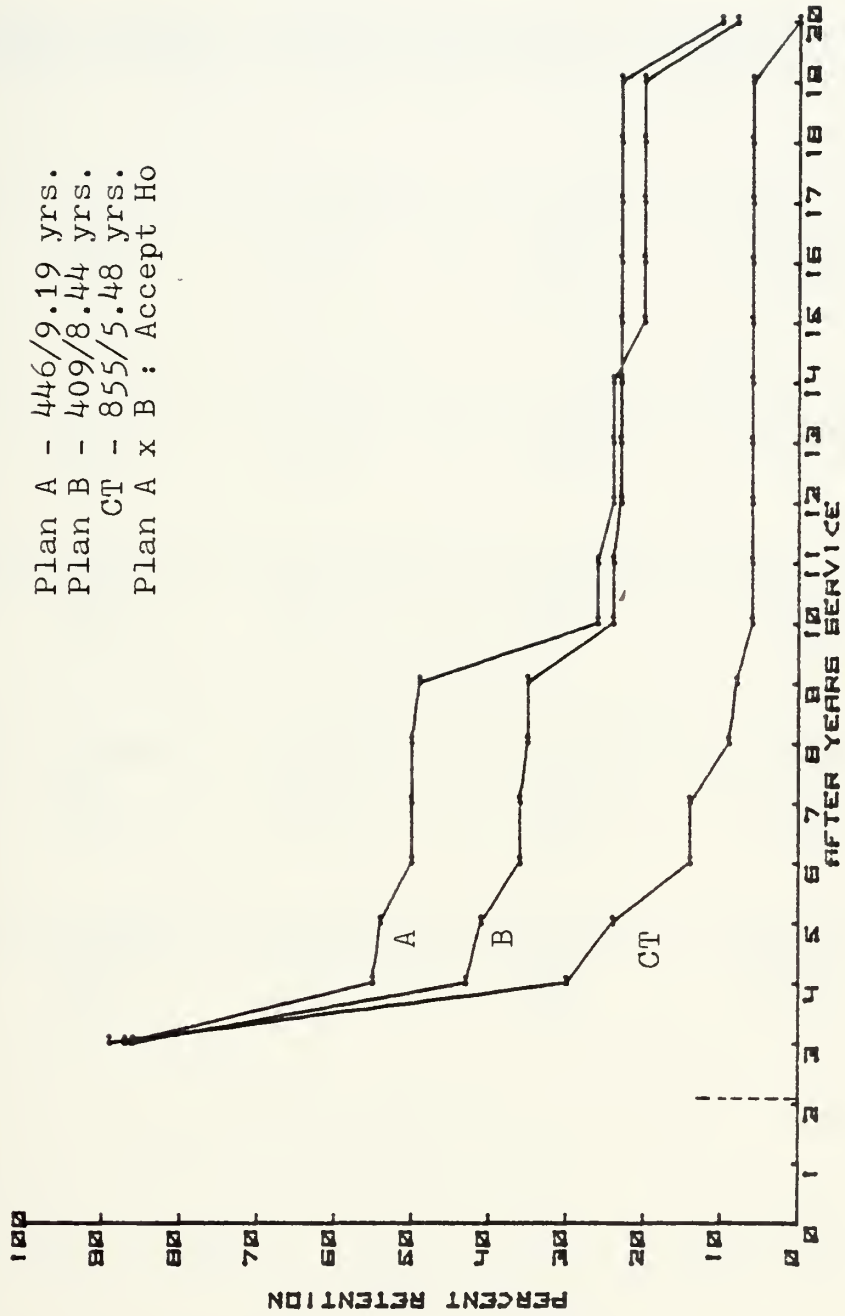


Table 10

E1-E3

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

AGGREGATE	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	430	314	270	1000
Plan B	300	272	242	1200
MALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	600	342	400	1000
Plan B	370	314	314	1300
FEMALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	518	300	256	1400
Plan B	440	400	356	1500
WHITES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	455	284	216	700
Plan B	289	300	300	1000
BLACKS	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	700	472	386	1000
Plan B	550	414	414	1400

*The percentage changes in the table are computed for each of Plan A and B using the current intended years of service as the baseline.

Figure 7 - AGGREGATE E4 INTENDED RETENTION PROPENSITIES

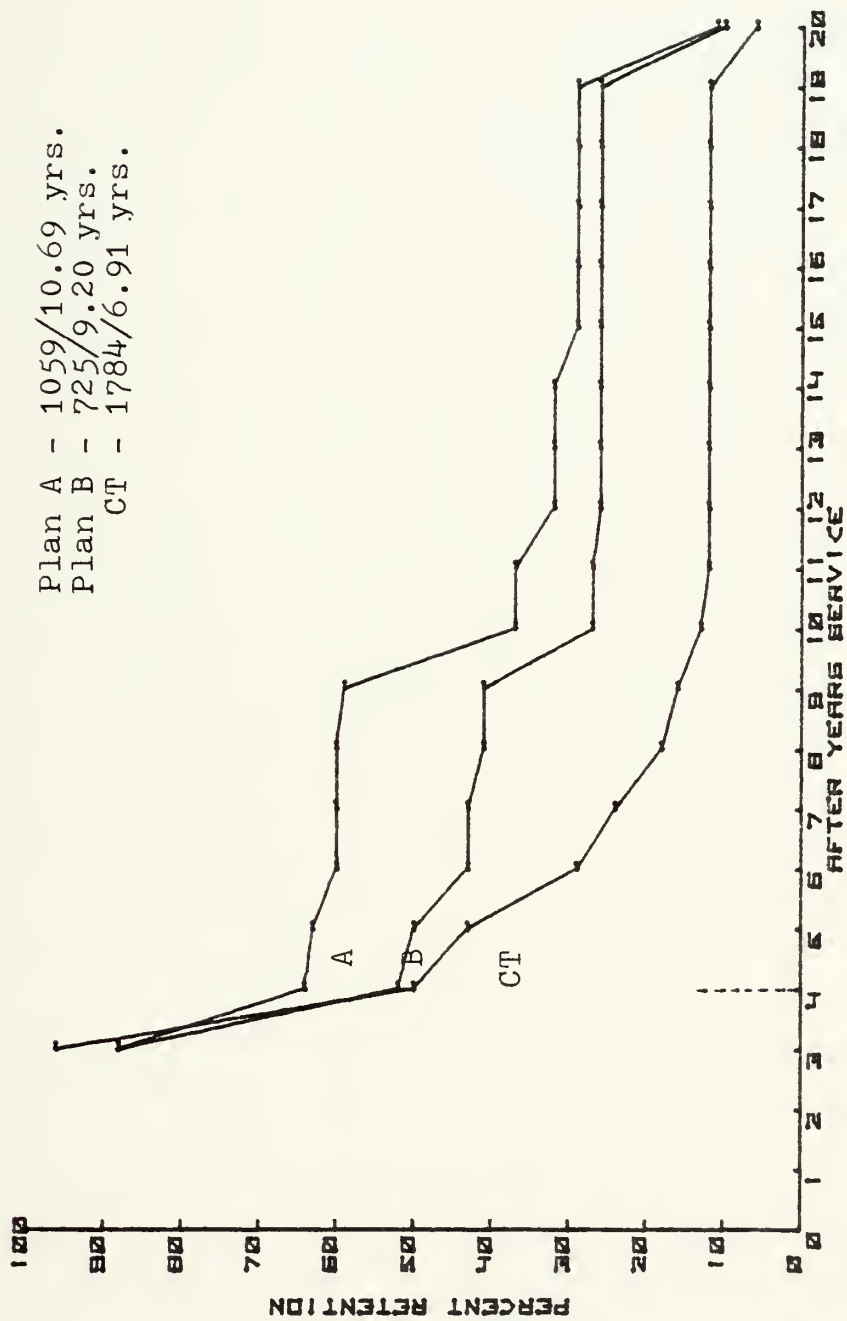


Figure 8 - MALE E4 INTENDED RETENTION PROPENSITIES

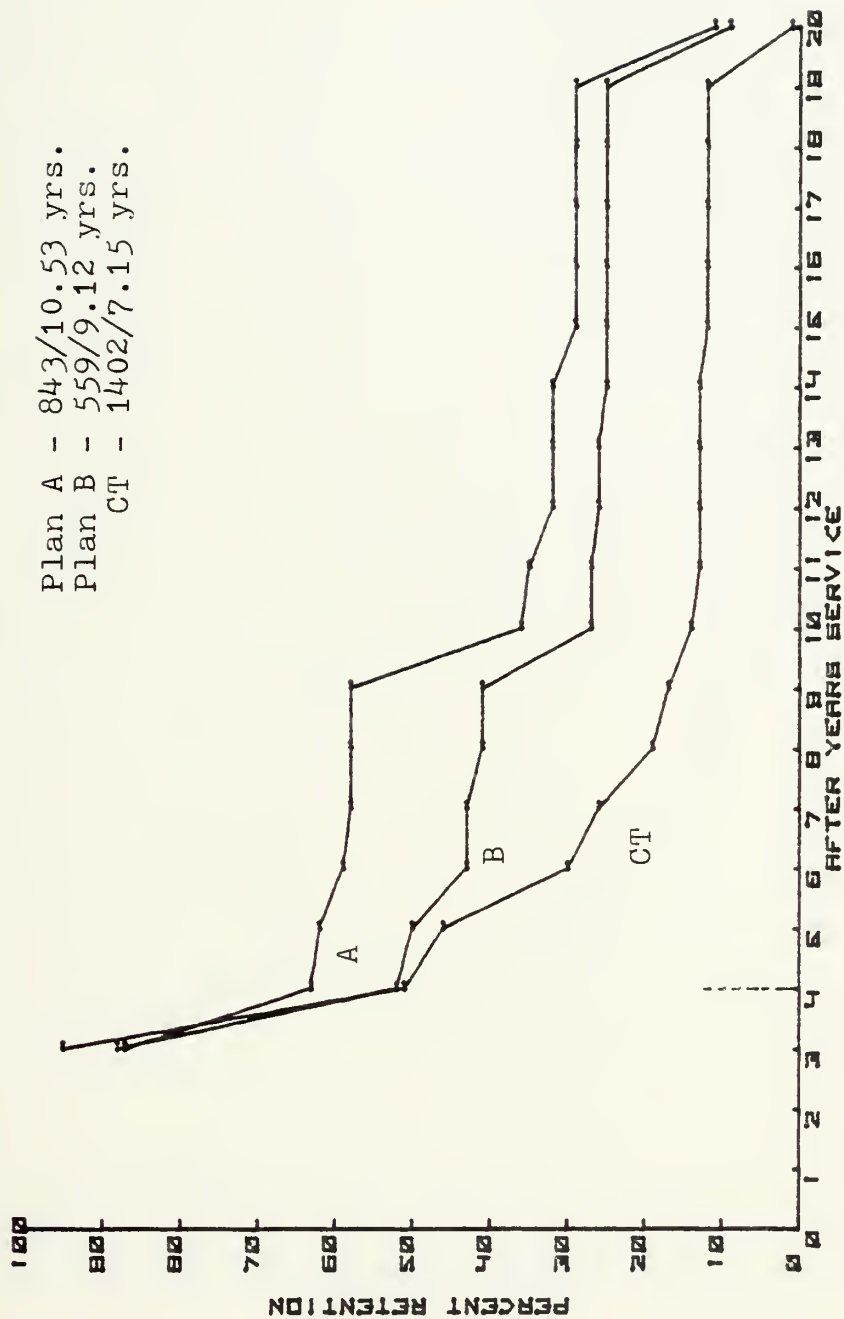


Figure 9 - FEMALE E4 INTENDED RETENTION PROPENSITIES

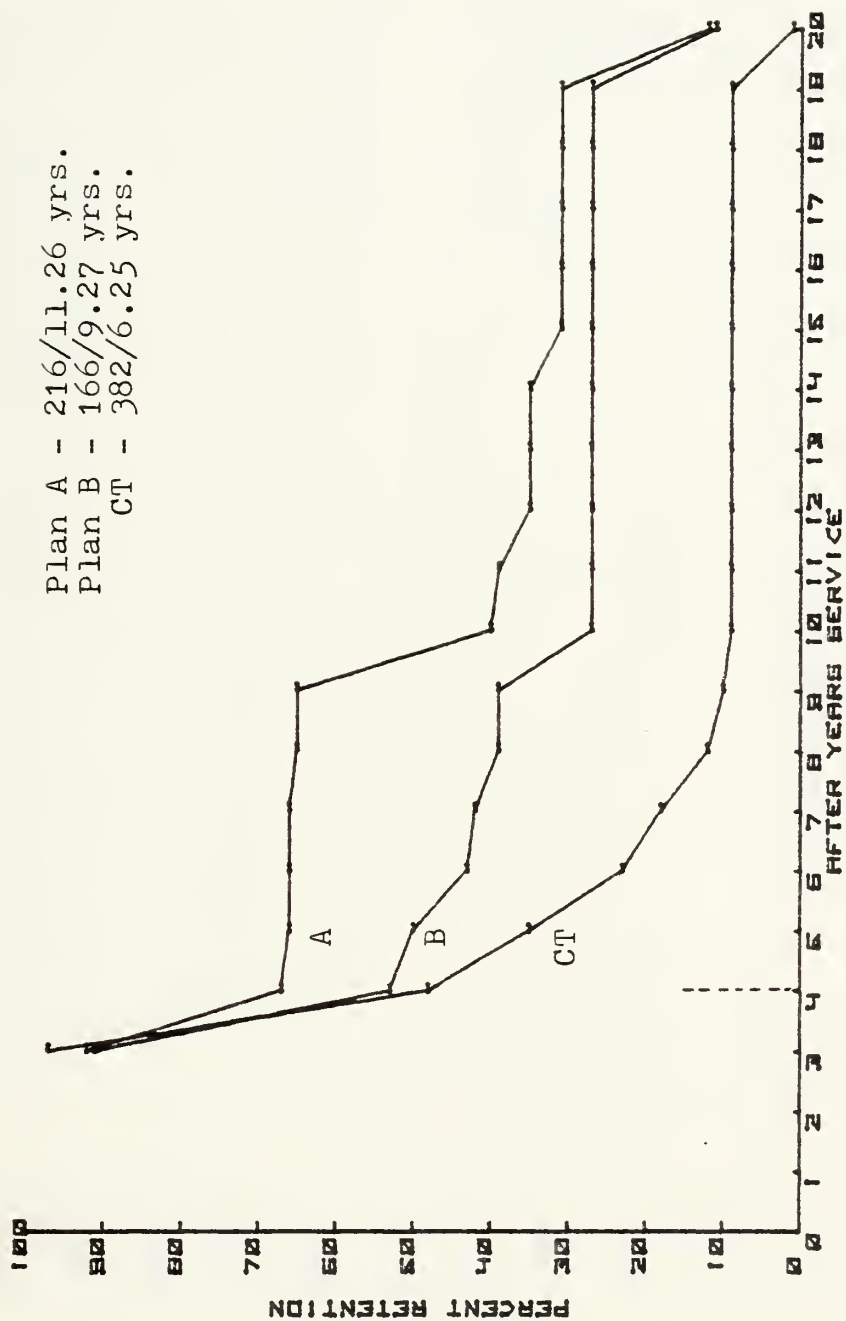


Figure 10 - BLACK E4 INTENDED RETENTION PROPENSITIES

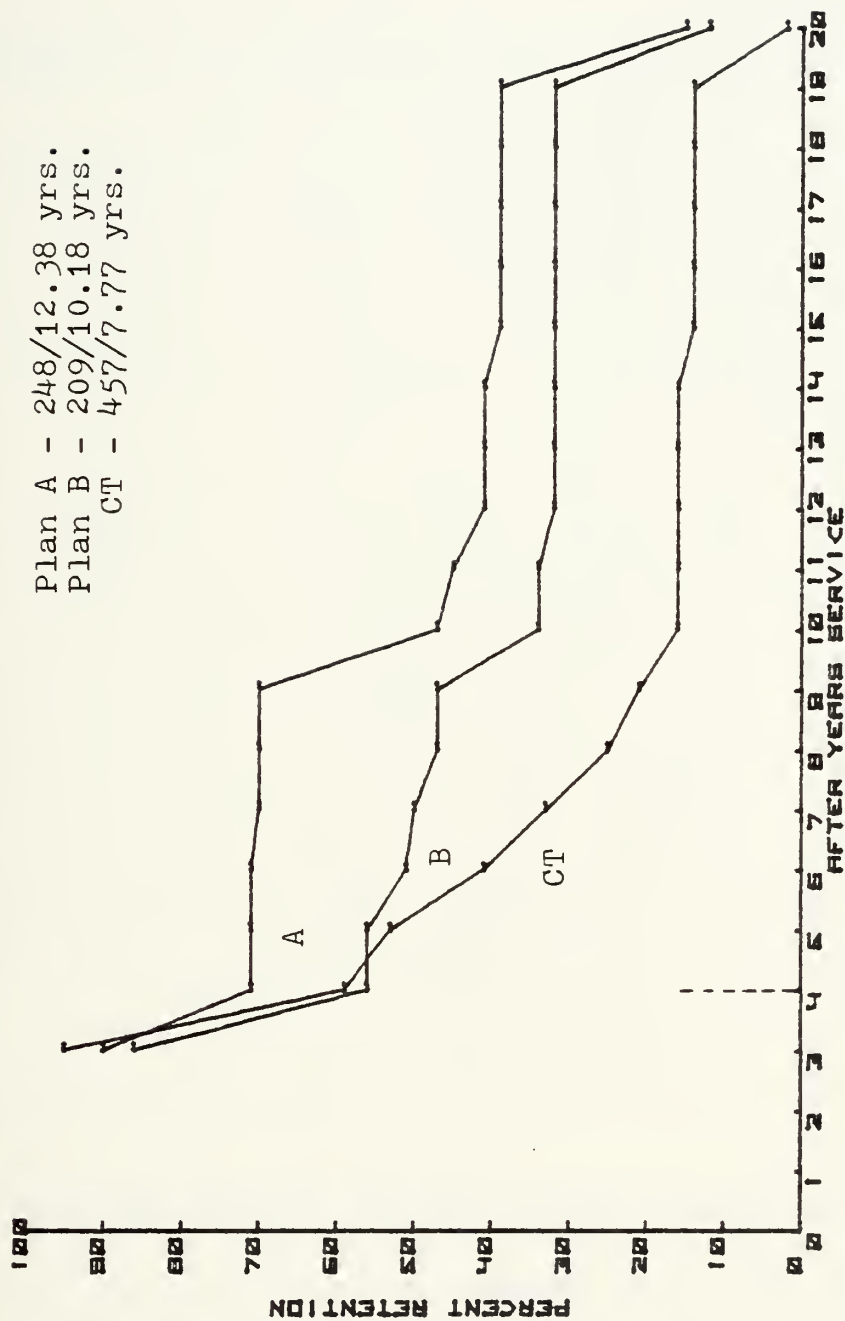


Figure 11 - WHITE E4 INTENDED RETENTION PROPENSITIES

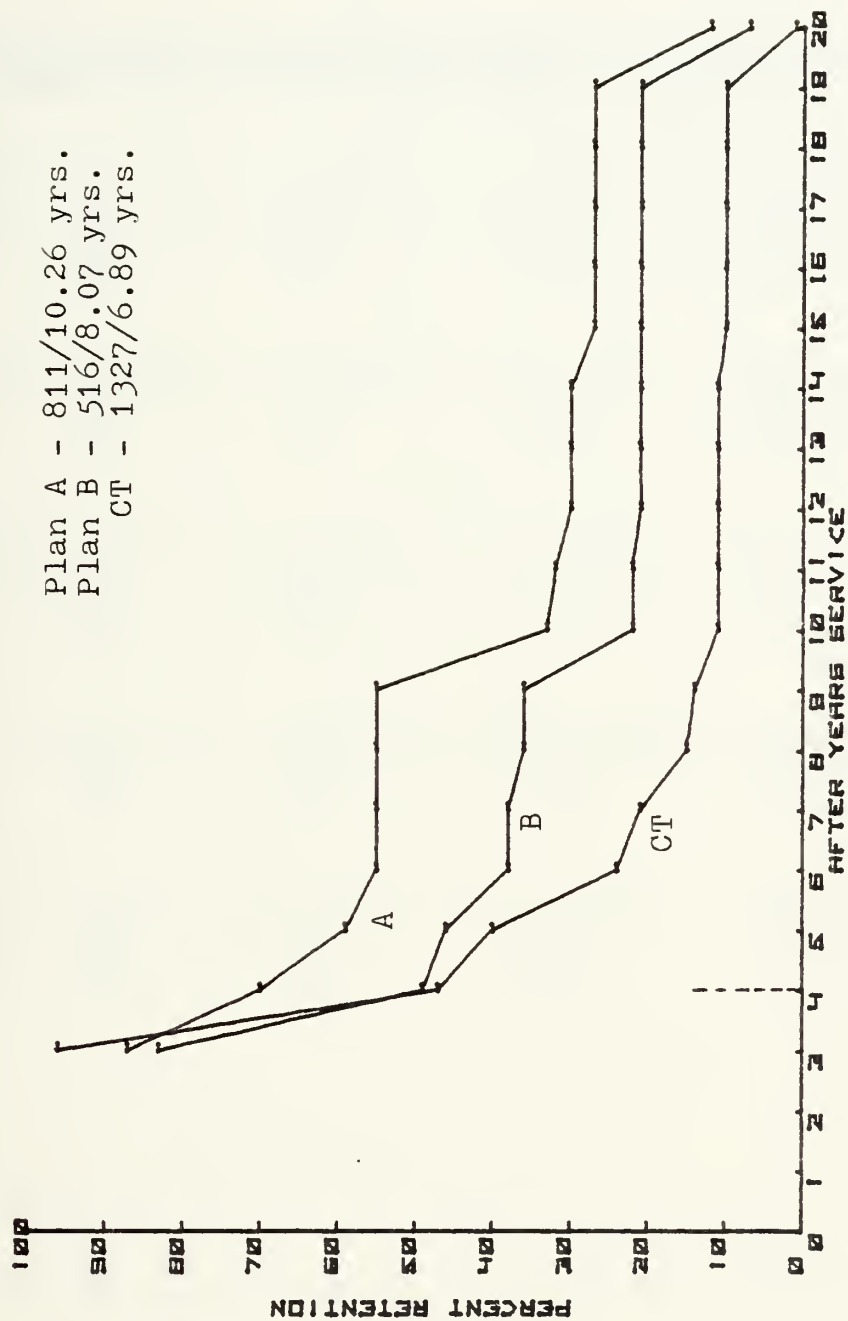


Table 11

E4

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

AGGREGATE	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	233	146	131	1100
Plan B	133	115	115	1100
MALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	205	129	133	1200
Plan B	121	100	108	1000
FEMALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	392	260	230	1200
Plan B	192	170	170	1000
WHITES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	237	173	155	1000
Plan B	125	82	82	600
BLACKS	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	184	166	233	433
Plan B	60	106	158	300

*The percentage changes in the table are computed for each of Plan A and B using the current intended years of service as the baseline.

Figure 12 - AGGREGATE E5-E6 INTENDED RETENTION PROPENSITIES

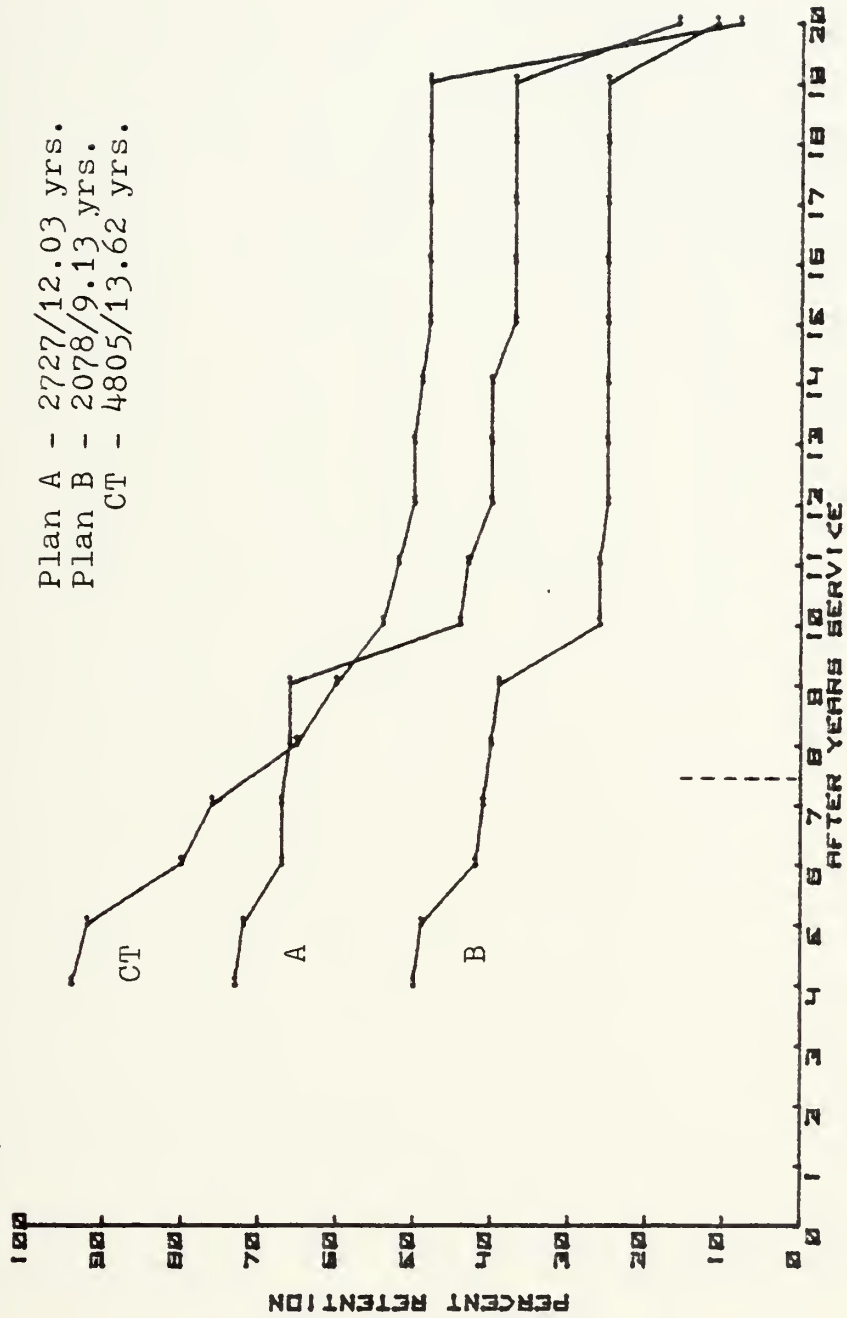


Figure 13 - MALE E5-E6 INTENDED RETENTION PROPENSITIES

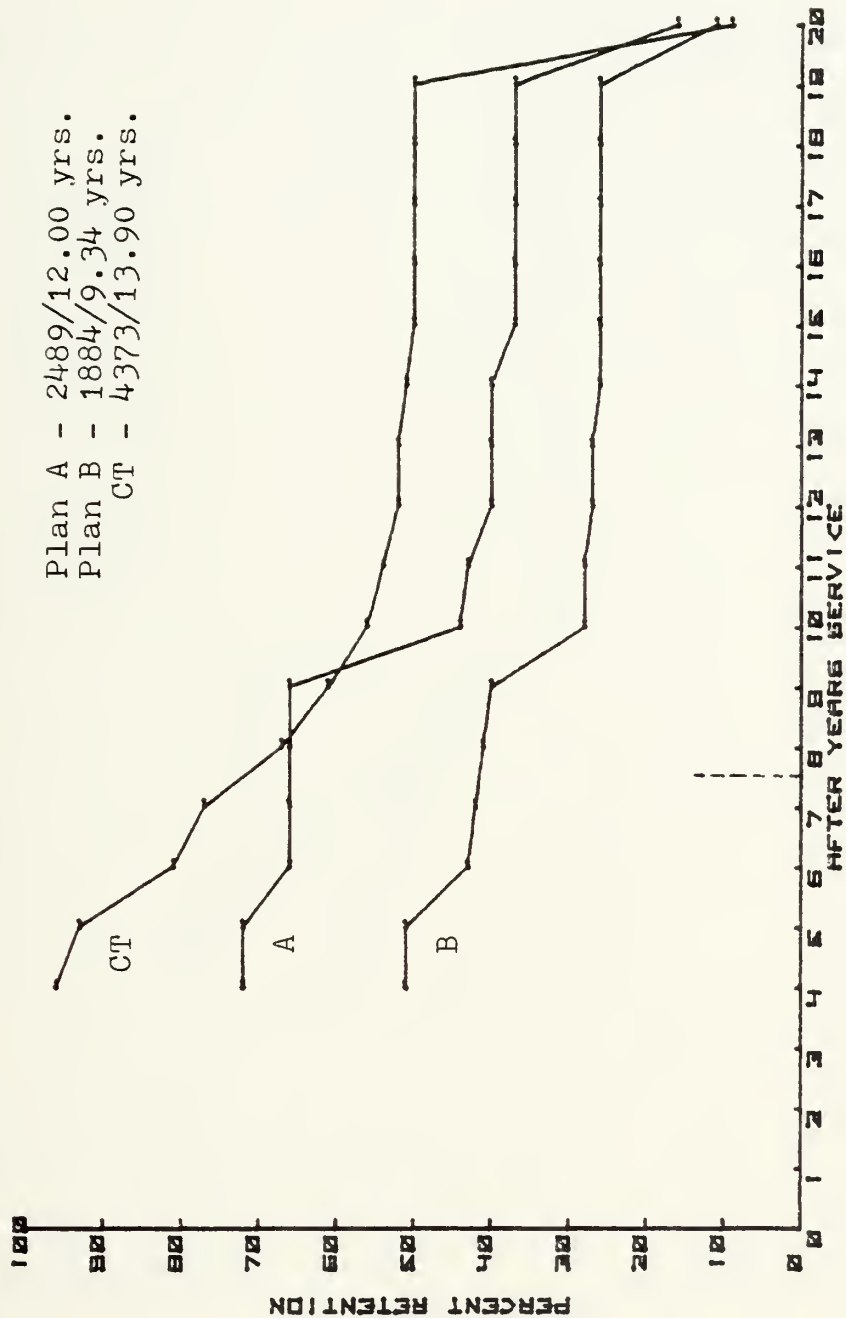


Figure 14 - FEMALE E5-E6 INTENDED RETENTION PROPENSITIES

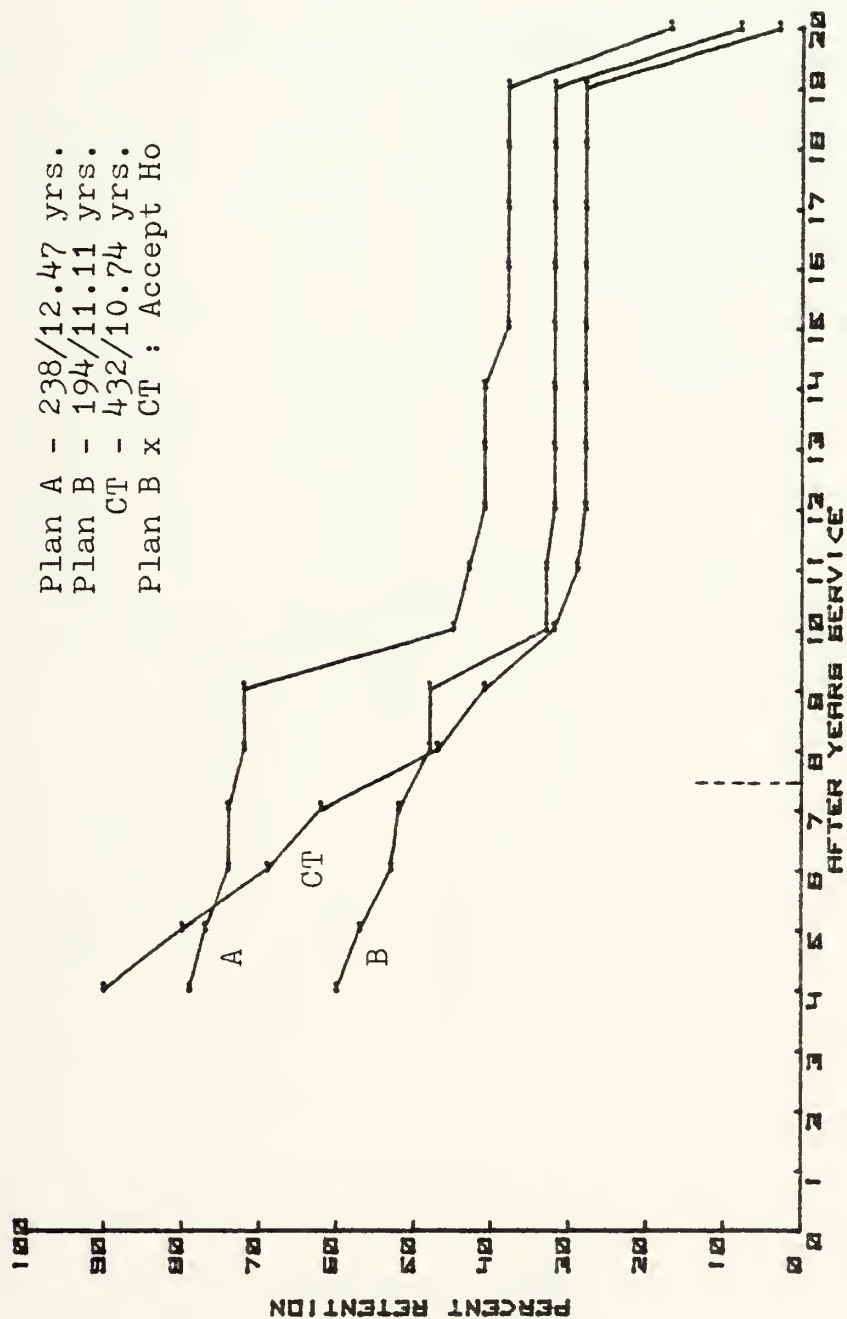


Figure 15 - BLACK E5-E6 INTENDED RETENTION PROPENSITIES

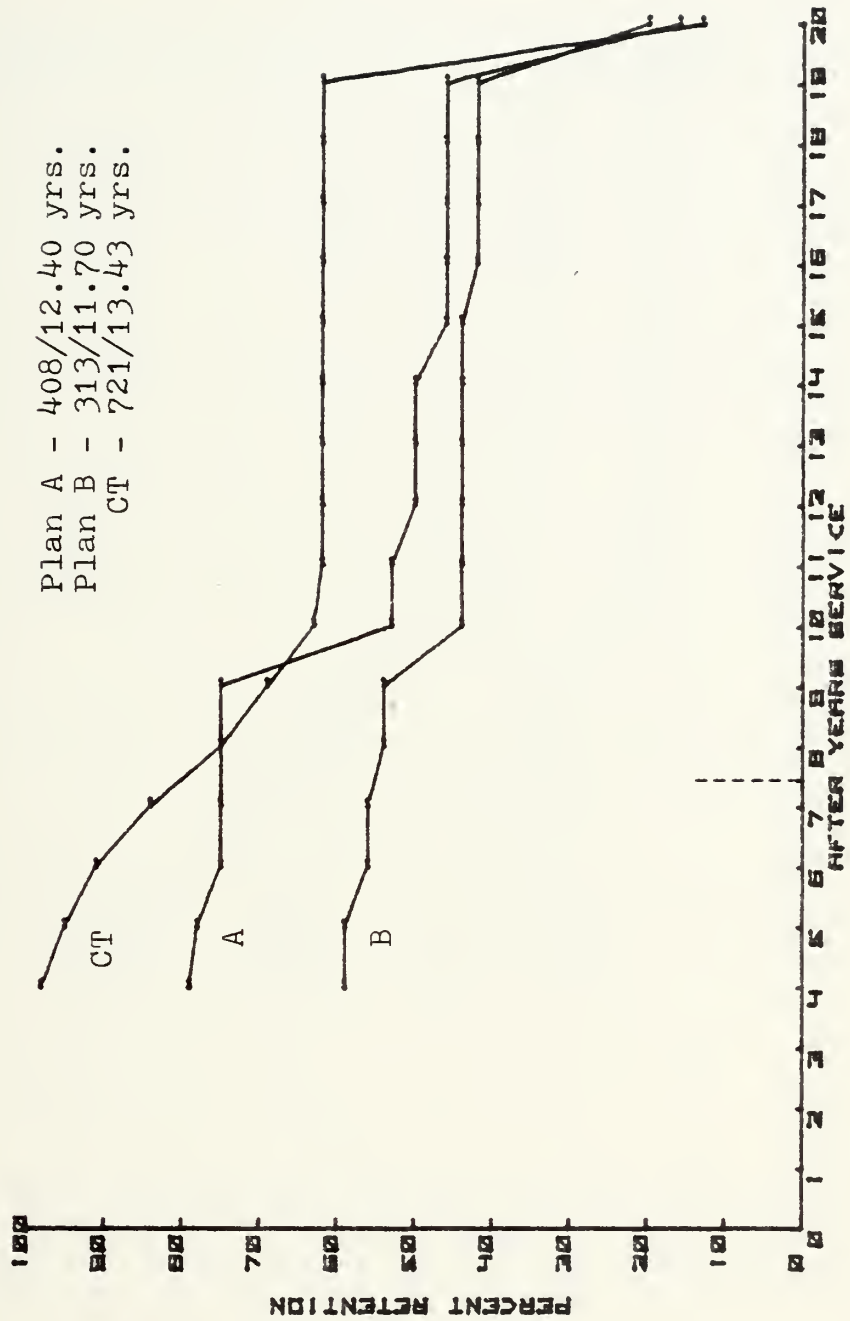


Figure 16 - WHITE E5-E6 INTENDED RETENTION PROPENSITIES

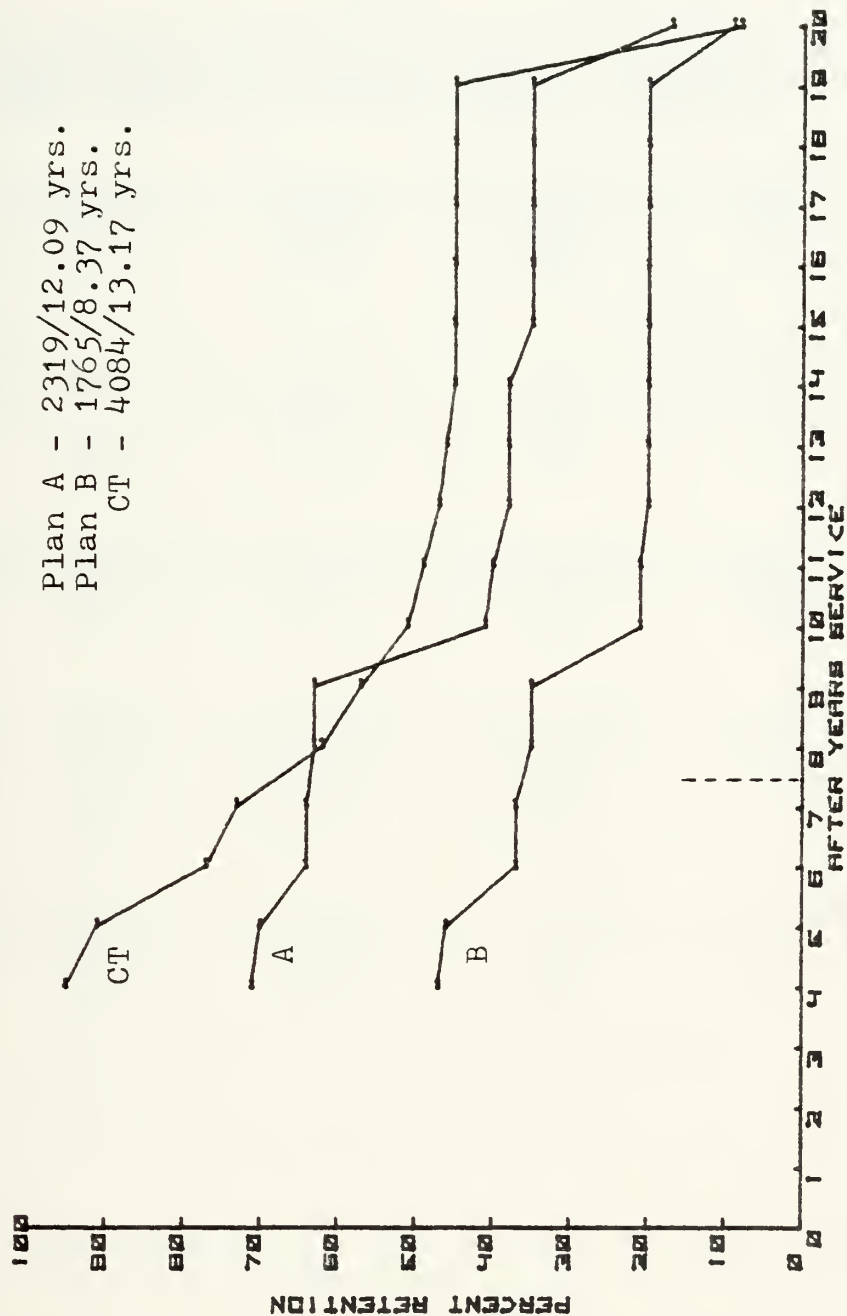


Table 12

E5-E6

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

AGGREGATE	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	0	(22)	(21)	114
Plan B	(42)	(46)	(43)	71
MALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	0	(23)	(27)	60
Plan B	(38)	(45)	(45)	20
FEMALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	53	41	28	466
Plan B	6	14	14	200
WHITES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	0	(21)	(27)	88
Plan B	(44)	(62)	(60)	13
BLACKS	8 yr.	12 yr.	16 yr.	20+ yr.
Plan A	0	(19)	(24)	(15)
Plan B	(27)	(27)	(32)	(35)

*The percentage changes in the table are computed for each of Plan A and B using the current intended years of service as the baseline.

Figure 17 - AGGREGATE E7-E9 INTENDED RETENTION PROPENSITIES

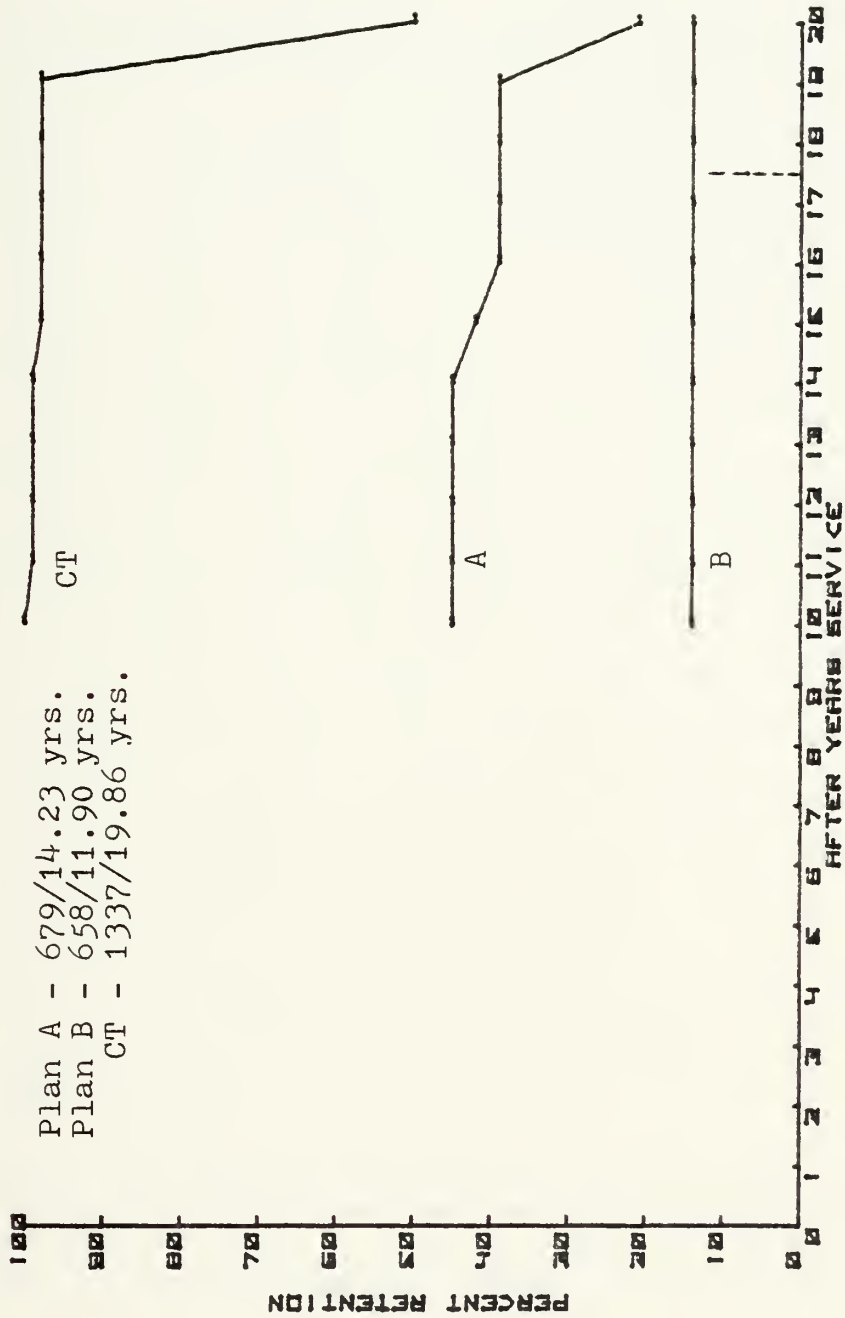


Figure 18 - BLACK E7-E9 INTENDED RETENTION PROPENSITIES

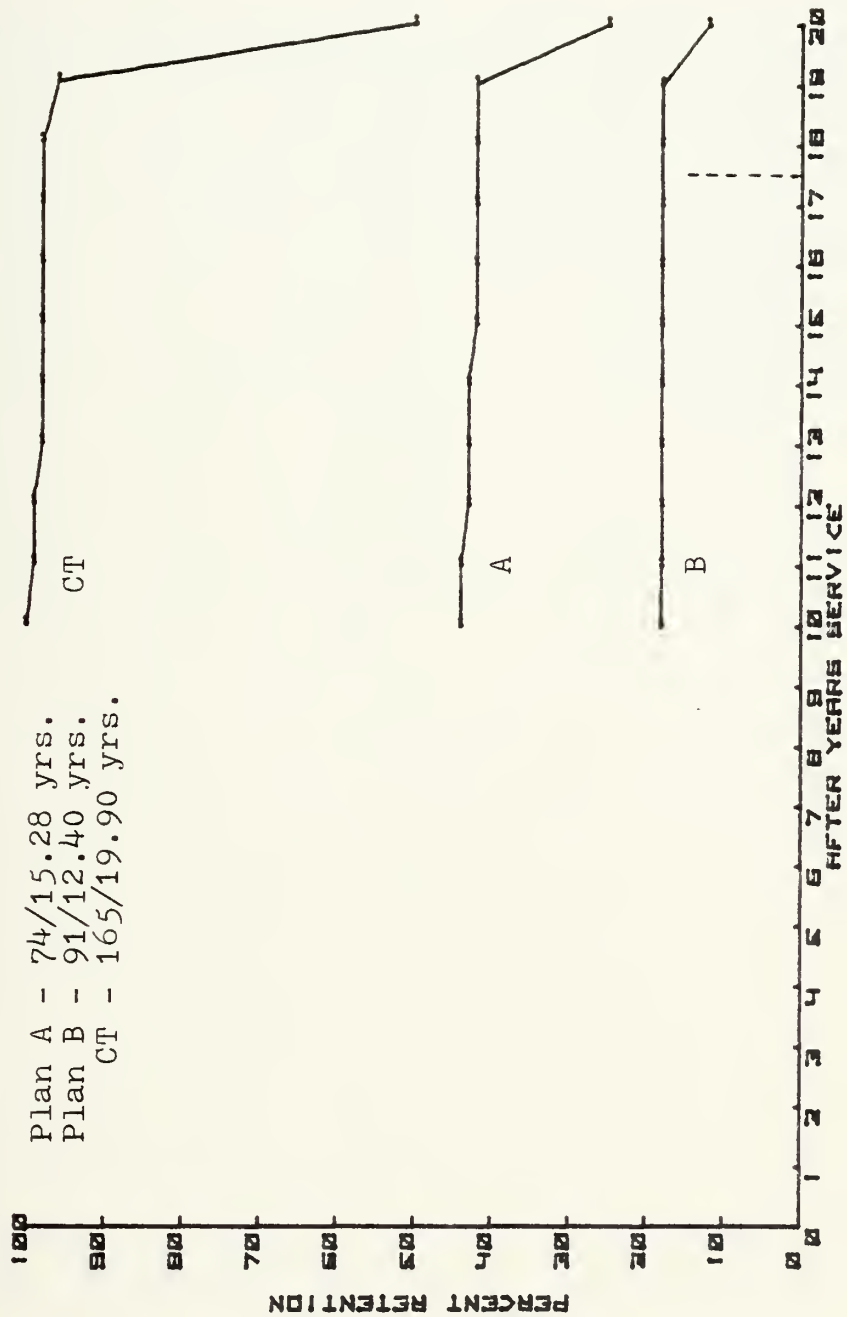


Figure 19 - WHITE E7-E9 INTENDED RETENTION PROPENSITIES

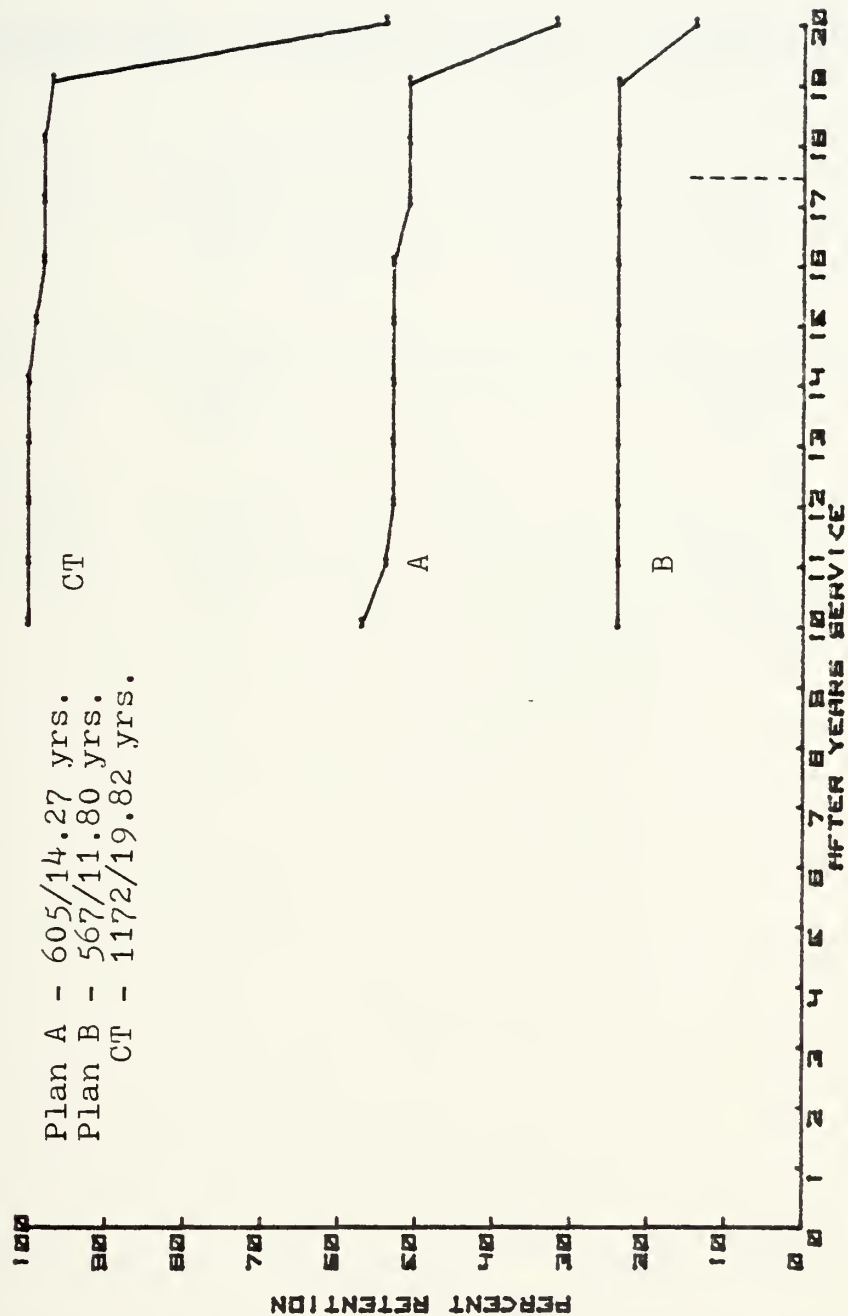


Table 13

E7-E9

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

AGGREGATE	16 yr.	20+ yr.
Plan A	(59)	(20)
Plan B	(78)	(70)
WHITES	16 yr.	20+ yr.
Plan A	(59)	(51)
Plan B	(81)	(76)
BLACKS	16 yr.	20+ yr.
Plan A	(47)	(45)
Plan B	(76)	(75)

*The percentage changes in the table are computed for each of Plan A and B using the current intended years of service as the baseline.

C. CONCLUSIONS

Retirement plan A is preferred to Plan B by all groups and subdivisions, except the female E1-E3 respondents. Although Plan A exhibits a higher number of expected years service than Plan B, several reversals do occur in the E1-E3 white and black samples during the middle to late career time frame. It is also important to note that the largest increases in retention propensity for either alternative plan occurred with the E1-E3 sample. This group also demonstrates the smallest retention propensity under current policies.

The dramatic increases in junior enlisted retention propensity can probably be attributed to the compensation payments and annuities offered by both plans for service between 10-20 years. Severance payments and retirement annuities attainable without having to serve 20 years is appealing. Vested military retirement compensation, whether earned or receivable after ten years service, offers the individual the opportunity to acquire training, skills, and job experience and to apply these at an earlier age in the civilian job market where wages may be higher.

The later career preference for Plan B may be explained by short- and long-run career intentions. For those intending to remain on active duty towards a full length service career, Plan B may be perceived as superior to alternative Retirement Plan A, in that it offers retirement annuities payable at 20 years and increased annuities receivable at age 60. Persons

retiring with 20 years service under Plan A would have to wait approximately another 20 years before receiving retirement annuities, while those retiring with 20 years under Plan B would immediately begin receiving annuities.

This reversal is also possible related to the fact that E1-E3's indicate the largest increases in retention propensity under proposed retirement plans. This dramatic change in career intentions may serve to enhance the perception of the value of annuities receivable immediately upon retirement in contrast to a lump sum severance bonus.

The substantially lower retention propensities of the E4 sample may signal an initial decline in reenlistment and career intentions of the petty officer/middle management supervisor. This trend is additionally supported by the career intentions of the E5-E9 respondents. Although the higher pay grades also prefer Plan A to B, enlistment intentions of the total sample decrease tremendously when these senior personnel are asked what they would do if given the opportunity to begin their careers over again. The propensity not to rejoin the service can not be specifically attributed to Retirement Plan A or B, and may be the result of such factors as dislike for service life, increased knowledge and eligibility for civilian job opportunities, pay, family separation, arduous sea duty, etc.

The highest increases in retention propensity were demonstrated by the black and female subdivisions of the two junior respondent samples (E1-E3 and E4). Data from black respondents

indicated increases over current expected years service of 4.57 years in the E4 sample and 5.93 years in the E1-E3 sample group. Expected years service for female E4's rose 5.01 years while E1-E3 respondents indicated 4.65 additional years service. Most analysts would agree that civilian employment and training opportunities are lower for high school age blacks and females than for white males. After establishment in the military, these black and female respondents may be indicating a strong desire to remain on active duty for training, education, career development, and employment.

Both middle and advanced petty officer grades of women (E4 and E5-E6), indicated large retention propensities under Plans A and B. These results are particularly noteworthy in the E5-E6 sample. Although all other subdivision groups (whites, blacks) indicate lower retention propensities under alternative retirement plans, E5-E6 females reveal opposite desires. These respondents would remain on active duty longer than any of their peers. Equal pay and increasing job opportunities may serve as career motivating factors for women after an initial adjustment to military life is accomplished.

A validation test was undertaken to appraise the consistency of respondents' preference for either the current retirement plan or one of the new alternative systems. Early in the questionnaire respondents are asked their intended length of service. Later in the questionnaire they are presented with an alternative retirement plan and asked if they prefer the

alternative plan and what their intended length of service would be under the new retirement plan. The measure of effect of a new retirement plan is the difference between intended length of service under the new plan and intended length of service under current retirement policy conditions. The validation procedure consists of comparing the stated preference for the new plan with the sign of the calculated difference in length of service under the new plan. Results of the validation procedure are presented in Table 14. For example, of the 629 E1-E3's presented Plan A as an alternative retirement plan, 327 (52%) indicated an increase in their intended length of service under the new plan. However, 26 percent of these 327 stated they prefer the current plan. Of the 547 E7-E9's presented Plan A as an alternative retirement plan, 169 (30%) indicated an increase in length of service under the new plan. In contrast to the junior respondents, 59 percent of these 169 senior petty officers stated they nevertheless preferred the current plan. One would expect a high correspondence between an individual indicating an increase (decrease) in length of service under the new plan and that individual stating a preference for the new (current) plan.

The percentage of Plan A respondents who demonstrated both an increase in intended years of service and a preference for the new retirement plan ranges from 74 percent with junior personnel, to a low of 41 percent with the E7-E9 sample. Those respondents who indicated both a decrease in intended years of

Table 14
ENLISTED VALIDATION

	Years of Service Change	N	Percent Prefer New Plan	Percent Prefer Current
E1-E3 Plan A	Increase	327	74	26
	Decrease	302	51	49
E1-E3 Plan B	Increase	258	72	28
	Decrease	378	42	58
E4 Plan A	Increase	507	74	26
	Decrease	478	45	55
E4 Plan B	Increase	270	62	38
	Decrease	436	38	62
E5-E6 Plan A	Increase	1144	67	33
	Decrease	1457	26	74
E5-E6 Plan B	Increase	501	51	49
	Decrease	1553	14	86
E7-E9 Plan A	Increase	169	41	59
	Decrease	478	10	90
E7-E9 Plan B	Increase	58	02	98
	Decrease	612	02	98

service under Retirement Plan A and a preference for the current retirement system varies from a low of 49 percent in the E1-E3 sample to a high of 90 percent with the E7-E9 respondents. Percentage results are somewhat lower for respondents considering alternative retirement Plan B. Despite their propensity to serve fewer years under a new plan, a large number of such respondents prefer a new retirement plan to the current system. This preference is largest with alternative Plan A and percentages decrease as seniority increases.

The apparent inconsistency of a respondent stating a preference for an alternative Plan A or B (current plan), yet indicating a lower (higher) intended length of service under the new plan indicates that other variables besides retirement plan considerations affect the respondents decision to remain on active duty. The above inconsistencies may partially be explained by resistance to change and fear of losing active duty already invested in the current retirement plan. This probably reveals a trend to remain "status quo" by those respondents merely a few years away from retirement eligibility. The direct and objective nature of the survey question may also presuppose a forthcoming change without addressing such factors as implementation plans, eligibility procedures, and grandfathering applicability. Respondents might actually reverse their preference towards the current retirement plan rather than suffer a perceived loss of compensation with the institution of new policies.

A common argument often encountered against alternative retirement systems providing payments or future annuities for ten or more years military service is that they simply prolong the usual mass exodus of junior personnel until the career midpoints. This is frequently criticized as a costly waste of defense manpower resources and training. Although a large decrease in retention propensity is experienced during the initial payoff years under Plans A and B, these plans are consistently associated with higher retention percentages throughout the career time frame (10-20 years). Early decreases in the retention of service personnel under the current retirement plan negatively affect full career retention. The early term positive retention impact of alternative retirement plans is not offset by their associated midcareer decrease in retention. In fact, greater retention under the alternative retirement plan is evident at the 20 year service point. This indicated tendency to increase overall retention is critical when considering new retirement systems.

V. ENLISTED ANALYSIS

RETIREMENT PLAN B BY PRIOR RESIDENCE CLASSIFICATION

A. THE SAMPLE

Past research has often utilized demographic characteristics and environmental variables as possible predictors of retention of military personnel. The design of one form of the Enlisted Survey Questionnaire permits analysis of retention propensities under alternative Retirement Plan B. After primary sample division by pay grade, subsequent stratification was also accomplished describing respondent residence at age 16. Respondents were grouped into one of three categories using population as the classifying criterion. These partitions consisted of large city (over 250,000), small city or town (50,000 - 250,000), and small town or rural (under 50,000). The total sample included 4,553 enlisted, with 1,235, 920 and 2,398 respondents divided between the three categories respectively. Specific sample sizes for each subdivision are provided in Table 15.

B. THE RESULTS

Generalized findings for sample groups are summarized as follows:

- 1) As indicated by prior analysis of data from enlisted respondents, the largest percentage increases in retention propensity occurred in the junior E1-E3 sample. Fewer senior enlisted personnel would choose again to

enlist. Percentage increase over current intended retention propensities ranged from 370 percent at eight years service, to a 1700 percent increase beyond 20 years service. All mean differences between current retention propensities and those computed by residence partitioning were significant at the .01 level. (Figure 20)

- 2) Retention analysis by residence classification supported the results of previous Retirement Plan A and Plan B comparisons in that Plan B generally indicated a substantial increase in career retention beyond the 20 year point. (Figures 20, 21)
- 3) Sample division by prior residence classification indicates large city environment as the classification which demonstrated the largest and most consistent increases in retention propensities in almost all pay grade samples. However, differences in sample group expected years of service were statistically significant in only three of twelve comparisons between prior residence classifications. These differences occurred in the junior sample between city and town subdivisions and the E5-E6 sample between the rural and city/town divisions. (Figures 20, 22)
- 4) Rural residence provided the next highest retention increases and replaced city respondents in the E5-E6 sample with the highest indicated retention propensity. (Figure 22)
- 5) Retention percentage differences between the large city and town divisions became indiscernable at the E4 pay grade level. This occurred in subsequent pay grades and at all reference years except the 20 year and beyond point. (Figure 21)
- 6) All retention propensity differences identified by residence classification became indiscernable in the senior enlisted pay grades. (Figure 23)

All findings are presented in graphic form in Figures 20 through 23. Retention percentage increases and decreases for specific years under Retirement Plan B are listed in Table 16. Coding procedures for the diagrams are similar to the procedure in Chapter IV except here the grouping is by respondent residence category. For example;

<u>Residence Cat.</u>	<u>Sample Size</u>	<u>Expected No. Intended Years Service</u>
(City) Cy	236	10.13 yrs.
(Town) T	144	8.06 yrs.
(Rural) R	313	9.13 yrs.

Results of the hypothesis tests and retirement plan comparisons are also presented in an identical format as outlined in Chapter IV.

Table 15

ENLISTED SAMPLE GROUPS AND SAMPLE SIZES
BY PRIOR RESIDENCE CLASSIFICATION

E1-E3		n
Aggregate		693
City		236
Town		144
Rural		313
E4		n
Aggregate		790
City		241
Town		182
Rural		367
E5-E6		n
Aggregate		2354
City		604
Town		473
Rural		1277
E7-E9		n
Aggregate		716
City		154
Town		121
Rural		441

Figure 20 - AGGREGATE E1-E3 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

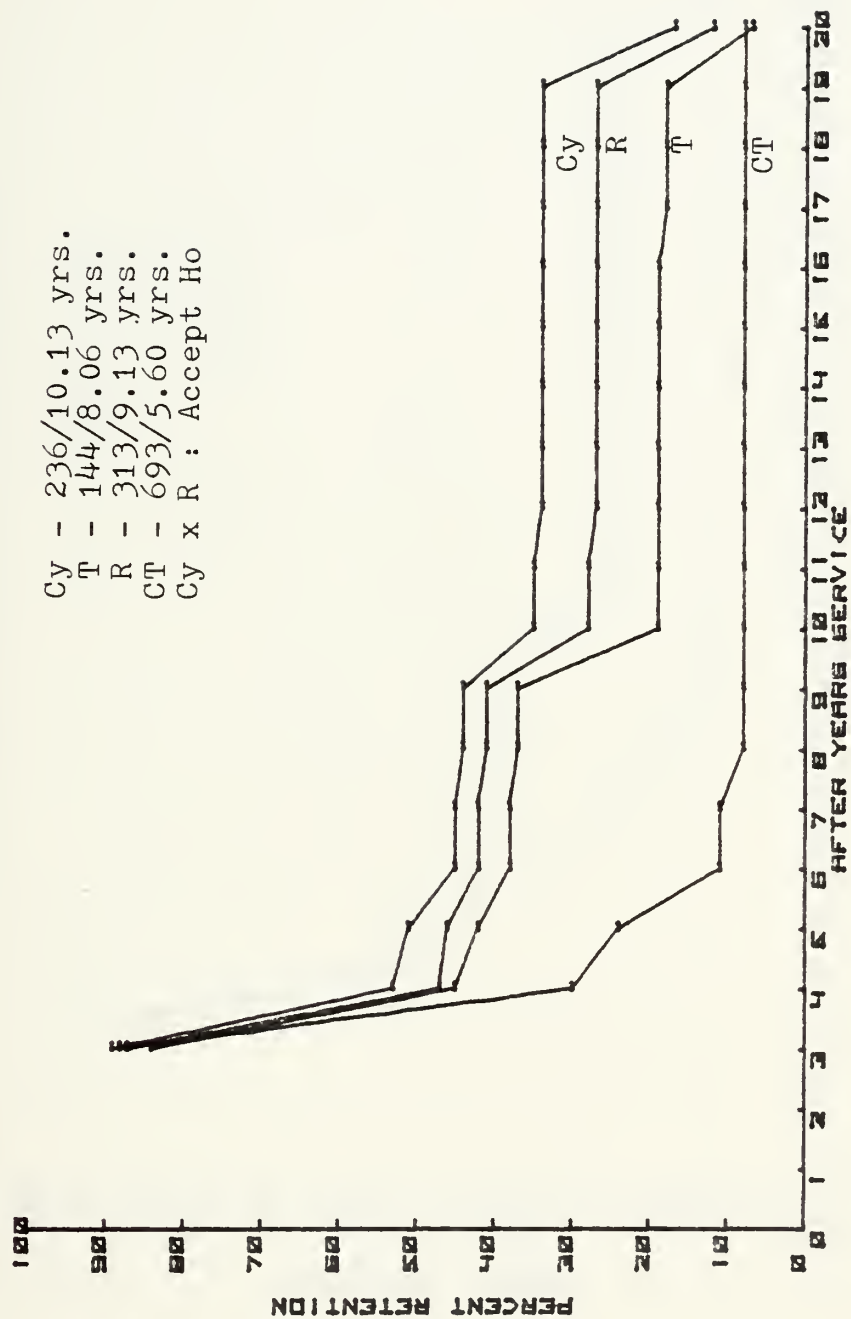


Figure 21 - AGGREGATE E4 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

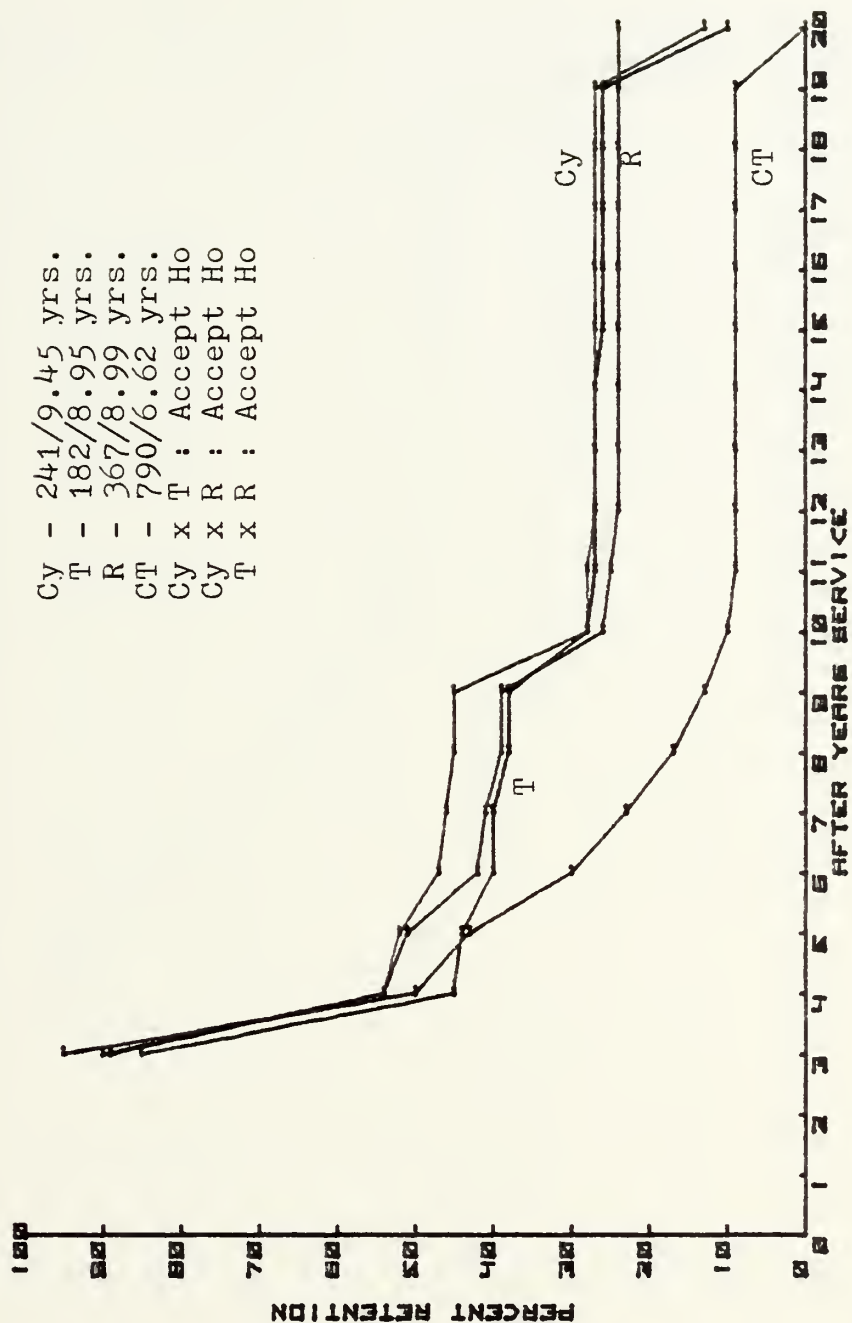


Figure 22 - AGGREGATE E5-E6 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

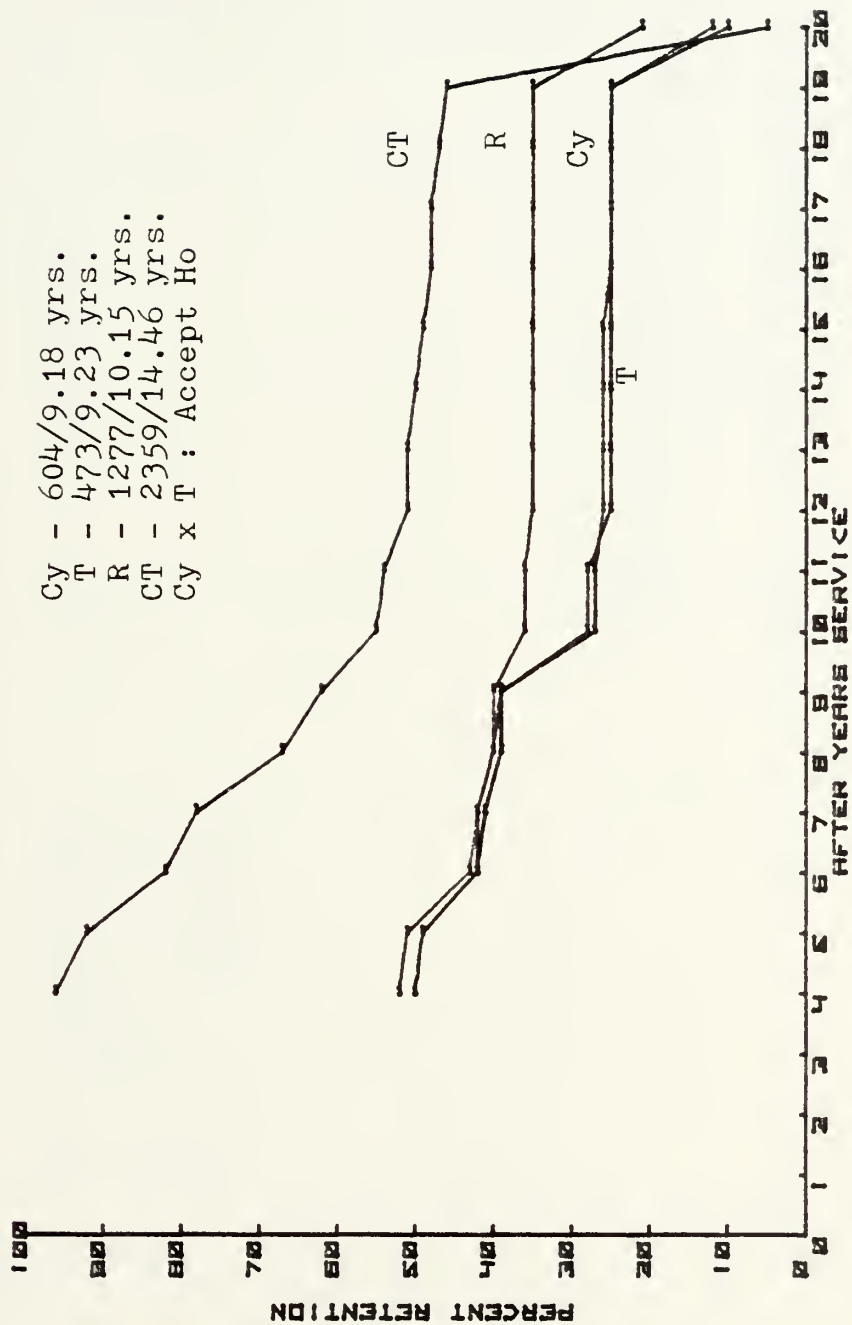


Figure 23 - AGGREGATE E7-E9 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

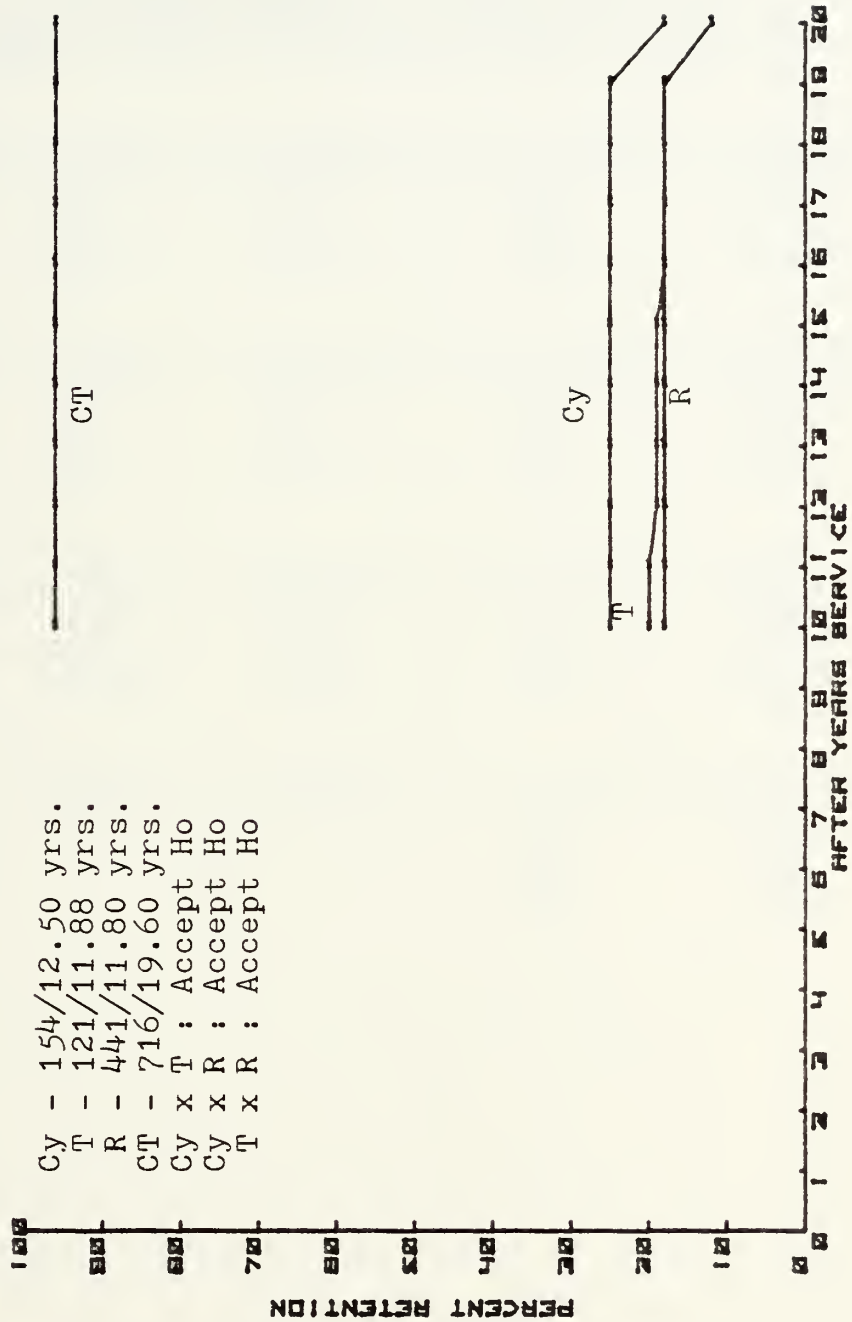


Table 16

ENLISTED RESIDENCE CLASSIFICATION:
RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLAN B AT SELECTED YEARS OF SERVICE*

E1-E3	8 yr.	12 yr.	16 yr.	20+ yr.
City	370	300	300	1700
Town	290	122	122	600
Rural	330	200	200	1200
E4	8 yr.	12 yr.	16 yr.	20+ yr.
City	142	180	180	650
Town	100	170	170	450
Rural	110	140	140	400
E5-E6	8 yr.	12 yr.	16 yr.	20+ yr.
City	(42)	(50)	(53)	500
Town	(42)	(54)	(53)	375
Rural	(43)	(33)	(32)	175
E7-E9	8 yr.	12 yr.	16 yr.	20+ yr.
City			(74)	(81)
Town			(82)	(89)
Rural			(82)	(89)

*The percentage changes in the table are computed for each of Plan A and B using the current intended years of service as the baseline.

C. CONCLUSIONS

Although mean differences were not statistically significant, the large city and small city or town classifications generally defined the highest and lowest retention propensities under the proposed retirement plan throughout the junior enlisted sample (E1-E4). These tendencies may be directly related to job opportunity and employment rate differences between the two areas. Metropolitan cities usually exhibit higher unemployment and poorer working conditions than suburban cities or towns. With fewer available opportunities, enlistees with large city backgrounds may be reluctant to return after initial entry into the military service. On the other hand, respondents from suburban areas may perceive and actually find increased job opportunities and employment in the environment from which they came. Assuming respondents would return to previous or identical environments, the small city or town enlistee would have more to lose by remaining on active duty.

Percentage differences by past residence classification tend to disappear as respondents gain experience, training, and seniority in the military. This may be explained by the loss of ties with previous geographical areas, the exposure and establishment of family and home in new areas, and the desire to complete a military career. The importance of background and residence classification becomes virtually nonexistent in the E7-E9 sample.

A major reversal in expected years service occurs with the E5-E6 sample. Rural residents now replace city respondents as those demonstrating the highest retention propensity. Rural residents indicate 10.15 expected years service whereas town and city respondents intend to serve only 9.23 and 9.18 years respectively. These differences are statistically significant at the .01 level. Although not statistically significant, this trend appears to reverse itself again in the E7-E9 sample.

Definitive conclusions are difficult to identify from the above analysis due to the absence of statistical verification and the possible effects of external variables not considered. If a respondent lived only a short time in the residence classification category this would tend to bias results and invite misinterpretation. Individual desires, motivation, and career intentions might also affect retention propensities. The indistinguishable differences in the senior sample are not surprising however, since all respondents are generally just a few years short of retirement age. Without statistical support, additional inferences from apparent trends and reversals are not feasible. This chapter thus avoids final conclusions and has presented a preliminary analysis and discussion of possible trends in retention propensities of enlisted respondents segregated by prior residence classification.

VI. OFFICER ANALYSIS - RETIREMENT PLANS B AND C

A. THE SAMPLE

This chapter presents results and discussion of indicated officer retention propensity under alternative Retirement Plan B as compared to C. The officer sample was initially stratified by pay grade with additional subdivisions by sex and race categorization. Sample sizes and breakdowns are provided in Table 17.

B. THE RESULTS

All findings are presented in graphic form in Figures 24 through 34. Coding and diagram format are identical to that described in the enlisted analysis (Chapter IV). Hypothesis testing is also utilized again to determine significant differences between sample means. Retention percentage increases and decreases for specific years under both alternative retirement plans are listed in Tables 18 through 20. Generalized findings for aggregate and subdivision samples are summarized as follows:

- 1) Current retention propensities surpassed those indicated by both alternative retirement plans in almost all groupings. The difference in expected years service between Plan C and current intentions was statistically indiscernable in the aggregate 01-02, male 01-02, and female 03 samples. However, both Retirement Plans B and C indicated higher retention propensities than currently planned in the female 01-02 sample. These are the only cases where Retirement Plan B or C equaled or exceeded current officer retention propensities. (Figures 24-26 and 29)

- 2) Retirement Plan C, as compared to alternative Plan B, consistently elicited a larger number of intended years service. This difference in expected years service was statistically significant at the .01 level for all sample subdivisions, excluding female respondents. Results from each of the three female samples (01-02, 03, and 04), indicated no discernable difference in years service when comparing Plan B to C. Retirement Plan C also generally demonstrated more desirable retention propensity increases/decreases than Plan B. Female 04's prove the exception to this generalization. (Figures 24-34)
- 3) With sporadic positive changes under Plan C, the majority of retention percentage changes were negative throughout the early and mid-career reference points. However, Plan C indicated a positive pattern of change beyond the 20 year point in eight of eleven sample groups. The negative career impacts were evident in the male 04, 05, and 06 samples. (Figures 31, 33, 34)

Table 17

OFFICER SAMPLE GROUPS AND SAMPLE SIZES

01-02	Plan B	Plan C	Total
Aggregate	667	676	1343
Males	458	474	932
Females	209	202	411
03	Plan B	Plan C	Total
Aggregate	700	713	1413
Males	504	525	1029
Females	196	188	384
04	Plan B	Plan C	Total
Aggregate	575	604	1179
Males	506	531	1037
Females	69	73	130
05	Plan B	Plan C	Total
Aggregate	376	346	722
06	Plan B	Plan C	Total
Aggregate	145	210	355

Figure 24 - AGGREGATE 01-02 INTENDED RETENTION PROPENSITIES

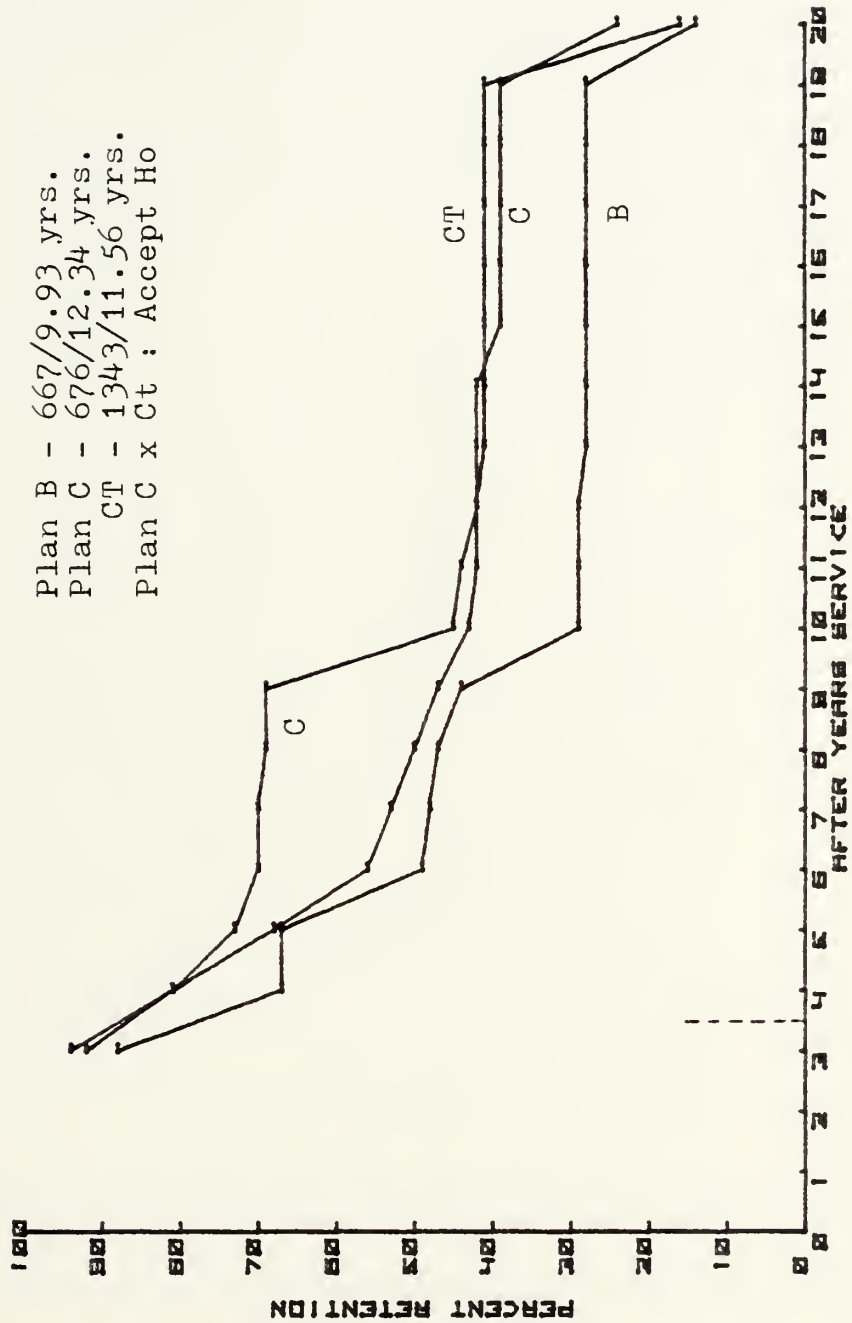


Figure 25 - MALE 01-02 INTENDED RETENTION PROPENSITIES

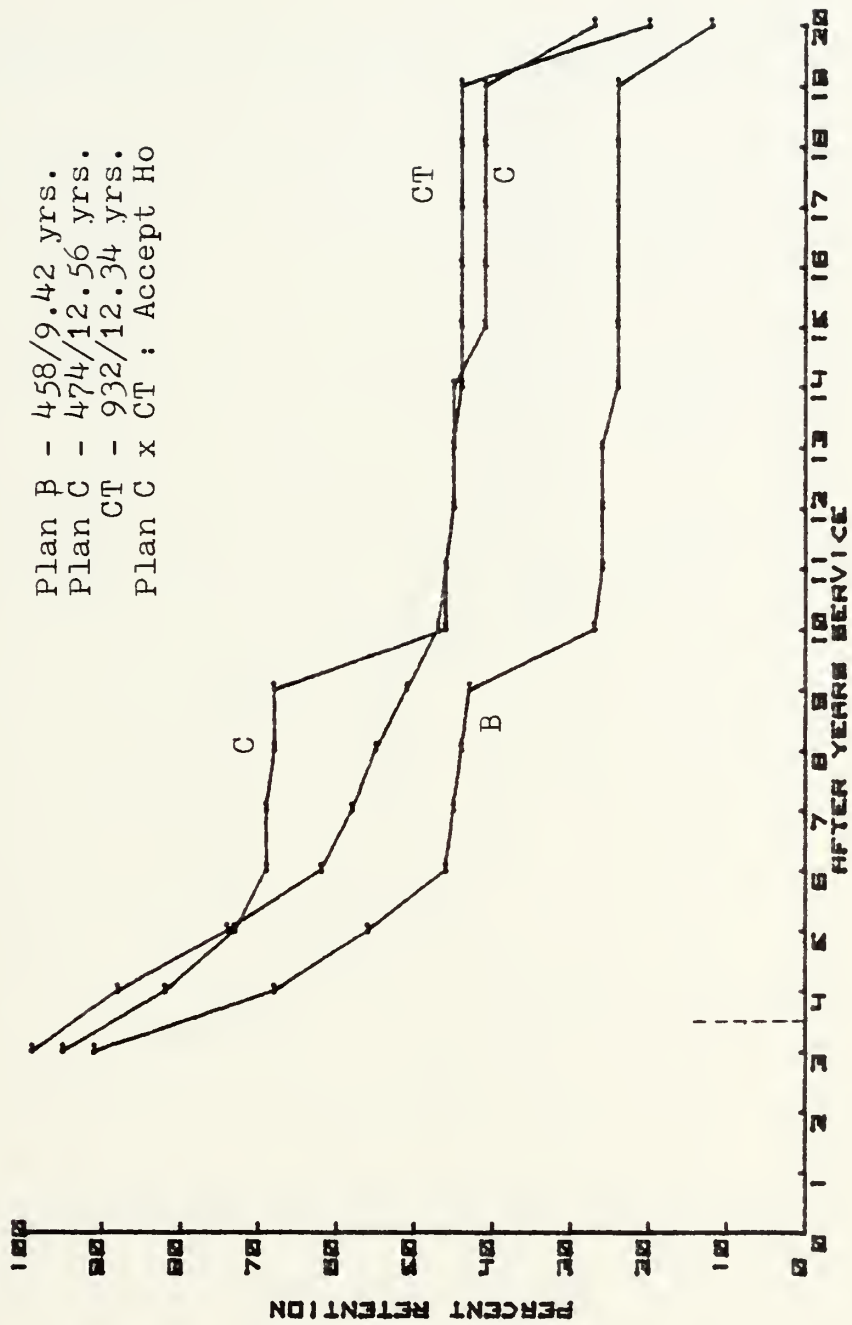


Figure 26 - FEMALE 01-02 INTENDED RETENTION PROPENSITIES

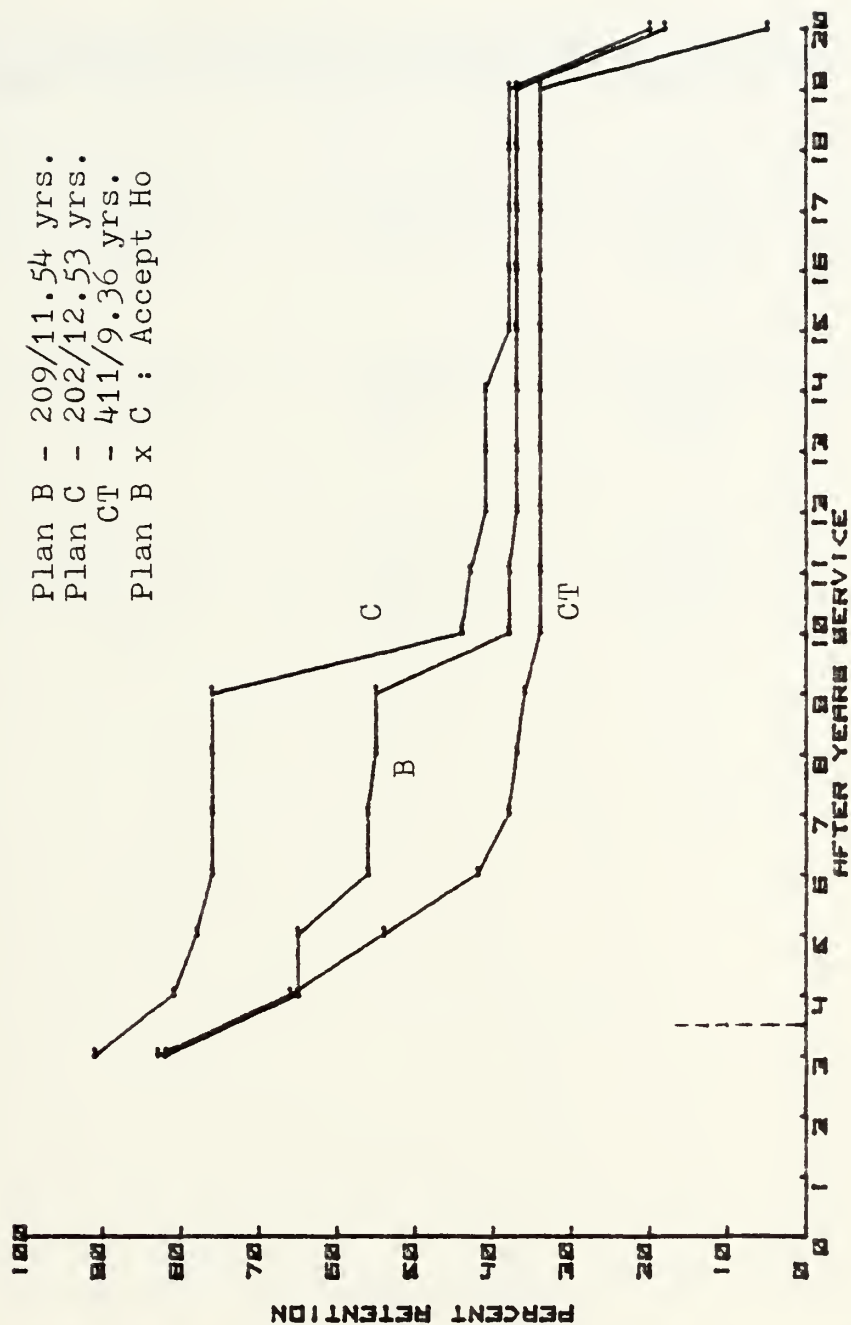


Table 18

01-02

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

AGGREGATE	8 yr.	12 yr.	16 yr.	20+ yr.
Plan B	(08)	(55)	(55)	(24)
Plan C	35	0	(05)	41
MALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan B	(21)	(41)	(45)	(90)
Plan C	23	0	(02)	35
FEMALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan B	(51)	09	09	260
Plan C	105	24	12	300

*The percentage changes in the table are computed for each of Plan B and C using the current intended years service as the baseline.

Figure 27 - AGGREGATE 03 INTENDED RETENTION PROPENSITIES

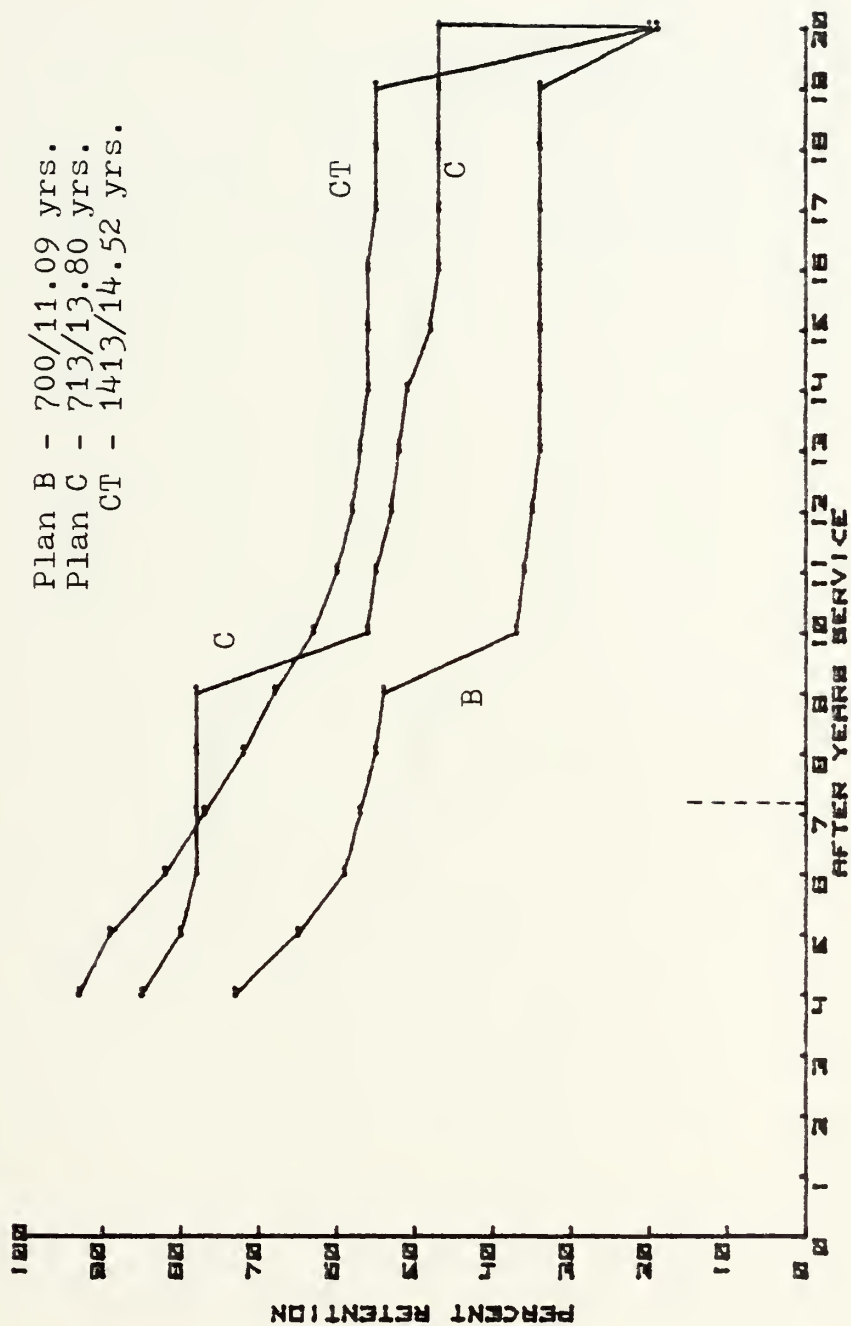


Figure 28 - MALE 03 INTENDED RETENTION PROPENSITIES

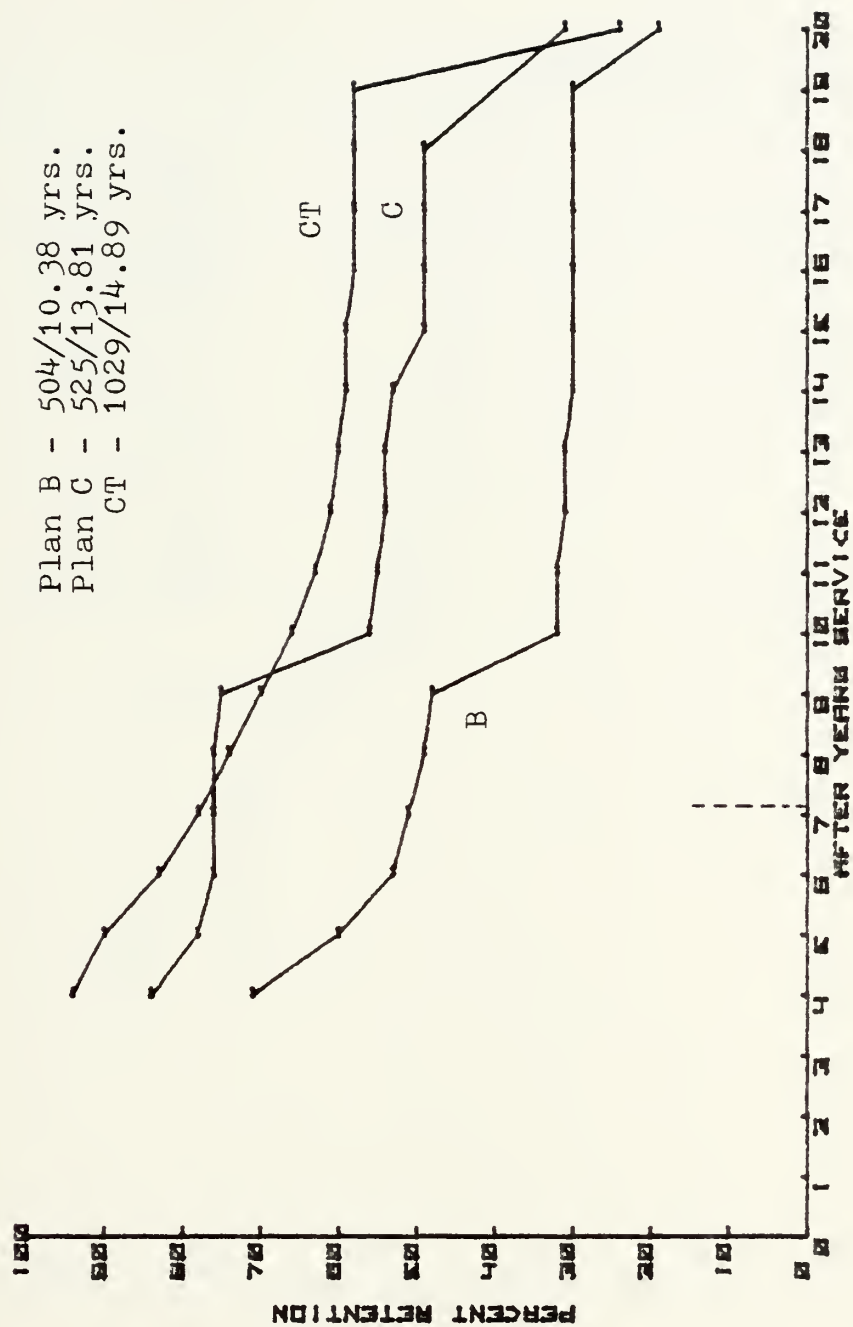


Figure 29 - FEMALE 03 INTENDED RETENTION PROPENSITIES

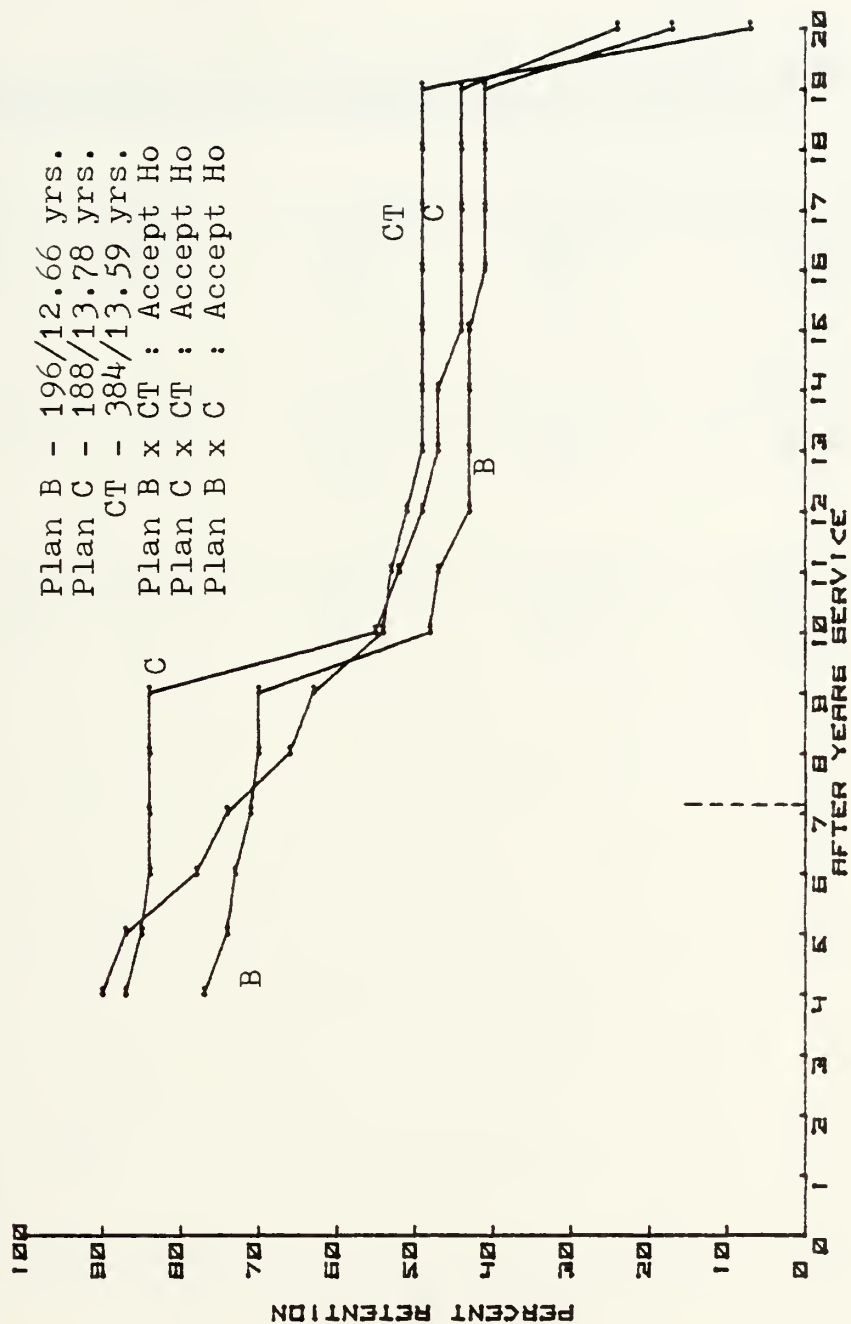


Table 19

03

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

AGGREGATE	8 yr.	12 yr.	16 yr.	20+ yr.
Plan B	(24)	(40)	(40)	(10)
Plan C	08	(09)	(16)	45
MALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan B	(34)	(48)	(49)	(25)
Plan C	03	(13)	(17)	33
FEMALES	8 yr.	12 yr.	16 yr.	20+ yr.
Plan B	11	02	(18)	166
Plan C	33	(04)	(10)	300

*The percentage changes in the table are computed for each of Plan B and C using the current intended years of service as the baseline.

Figure 30 - AGGREGATE 04 INTENDED RETENTION PROPENSITIES

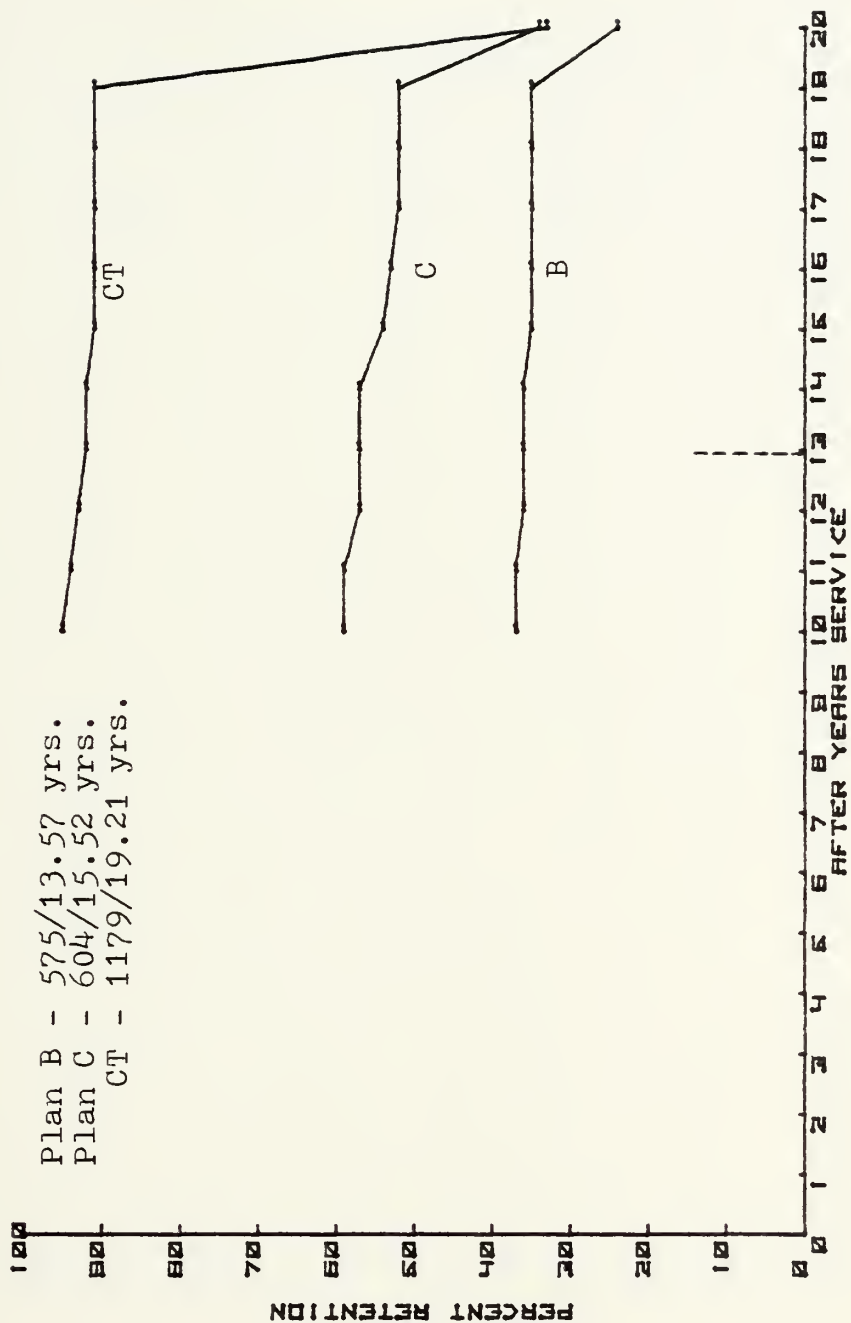


Figure 31 - MALE 04 INTENDED RETENTION PROPENSITIES

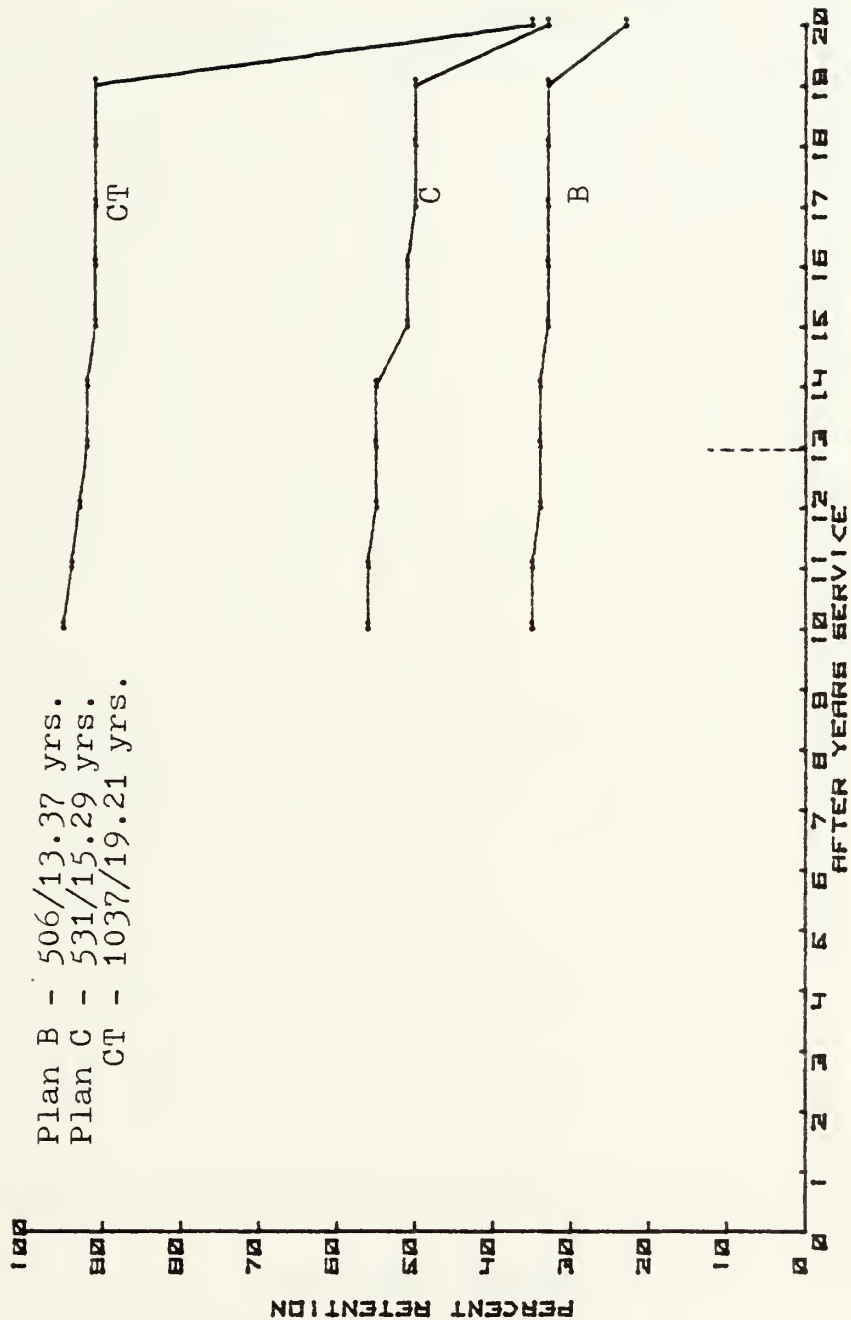


Figure 32 - FEMALE 04 INTENDED RETENTION PROPENSITIES

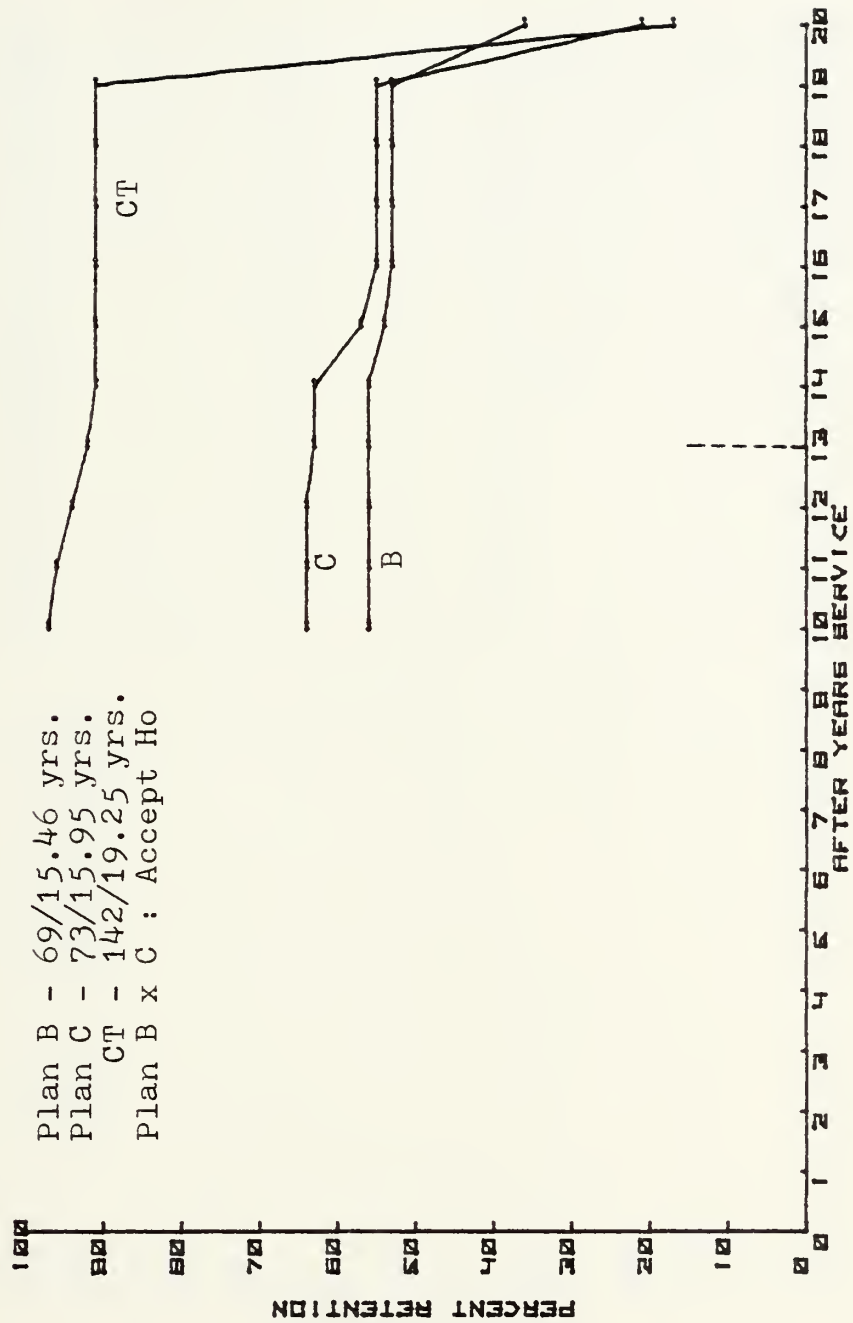


Figure 33 - AGGREGATE 05 INTENDED RETENTION PROPENSITIES

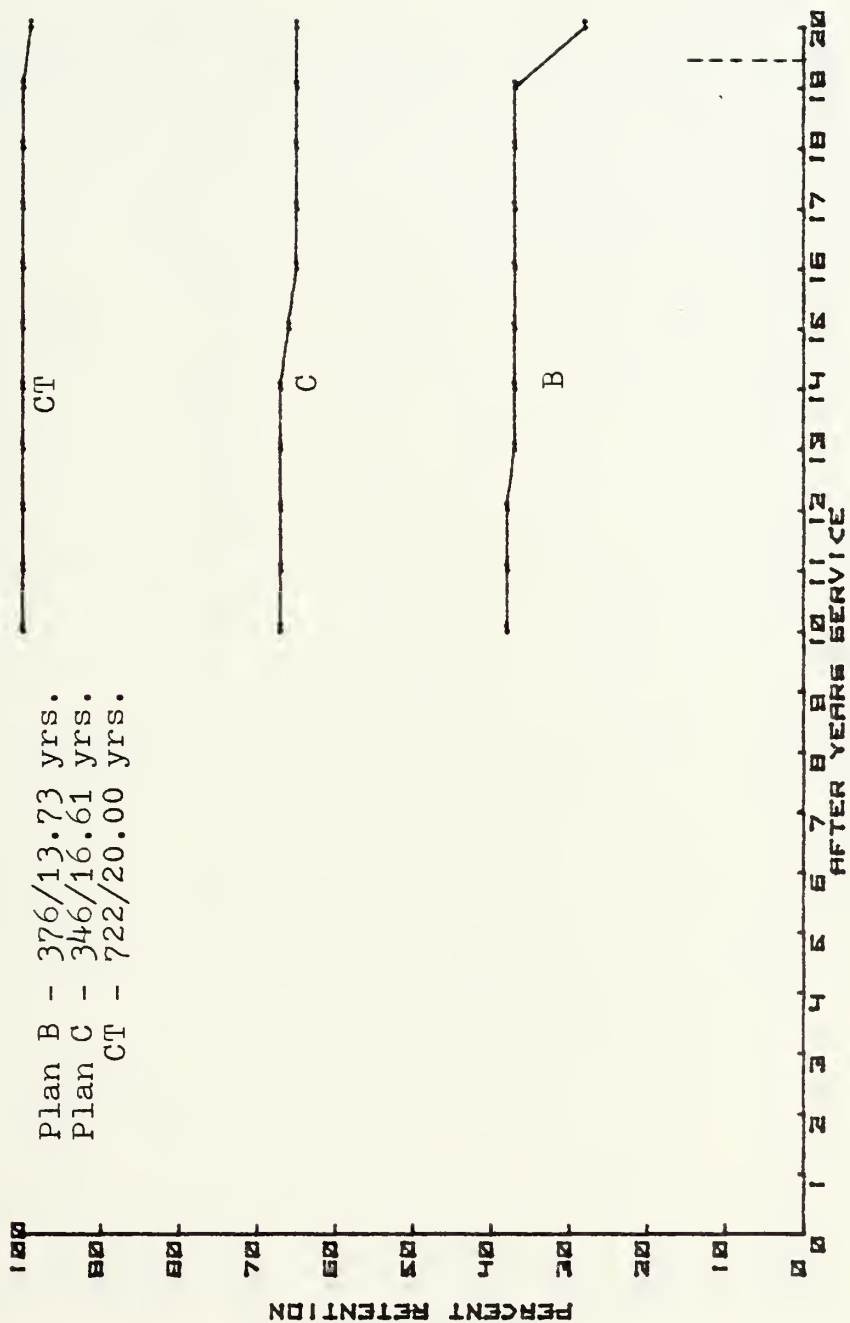


Figure 34 - AGGREGATE 06 INTENDED RETENTION PROPENSITIES

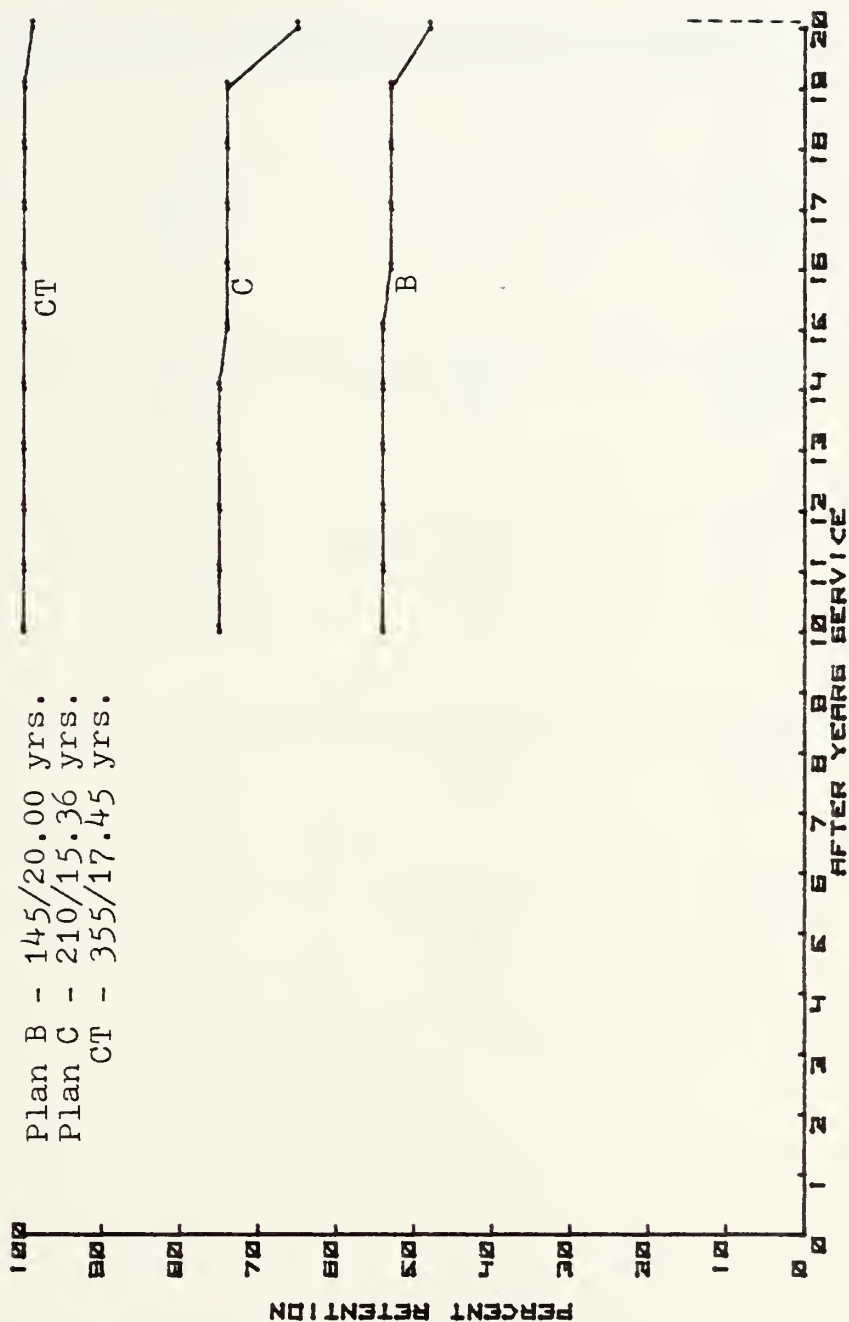


Table 20

04-06

RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLANS AT SELECTED YEARS OF SERVICE*

04			
AGGREGATE	12 yr.	16 yr.	20+ yr.
Plan B	(54)	(56)	(27)
Plan C	(33)	(41)	03
MALES			
	12 yr.	16 yr.	20+ yr.
Plan B	(62)	(62)	(36)
Plan C	(40)	(42)	(08)
FEMALES			
	12 yr.	16 yr.	20+ yr.
Plan B	(39)	(42)	118
Plan C	(32)	(40)	24
05			
AGGREGATE		16 yr.	20+ yr.
Plan B		(63)	(70)
Plan C		(34)	(46)
06			
AGGREGATE		16 yr.	20+yr.
Plan B		(46)	(51)
Plan C		(25)	(33)

*The percentage changes in the table are computed for each of Plan B and C using the current intended years service as the baseline.

C. CONCLUSIONS

As in the enlisted analysis, officer respondents demonstrate an overwhelming preference for short term compensation and annuity payments offered for service between 10-20 years. The fact that annuity payments do not start until the normal retirement age seems to be of little importance. This perception, coupled with the overall reduced reenlistment intentions of the officer respondents, may indicate a common pattern to leave the military between 10 and 20 years service in pursuit of civilian opportunities and careers. The only officer sample which indicates retention propensities as good or better than current intentions is the junior 01-02 respondents. For the most part, these are inexperienced college graduates, possessing limited knowledge of personal choices, job opportunities, and career potentials. After several years of general and specialized military training and experience most military officers perceive themselves as a valuable commodity in the civilian labor markets. If civilian wages and company benefits continue to rise faster than military compensation, increasing attrition of mid-career officers may possibly develop into an accepted and normal pattern.

Retirement Plan C is clearly preferred over Plan B by all sample groups except the female subdivisions. Alternative Plan C is also similar in structure to Plan A presented enlisted respondents in Chapter IV. Each plan proposes lump sum or severance bonuses upon departure and prorated annuities

receivable between the ages of 55-65. Both plans are identical except in the amount and rate of increase of severance payments. Payments under Retirement Plan C begin at a higher level and also increase at a faster rate for additional years service. Maximum bonuses are \$140,000 for Plan C and \$64,000 under Plan A. Although direct comparisons and conclusions can not be formulated, similarities in retention patterns and trends do exist between the two analyses.

A noteworthy difference between officer and enlisted respondents exposed to alternative Retirement Plan B is apparent beyond the 20 year service point. Although enlisted respondents generally preferred Plan A over B, a positive impact in retention propensity was evident under Plan B at the normal career exit point in all sample groups. This long run preference for Plan B does not emerge with the male officer respondents however. This data may additionally support declining officer retention propensities and that fewer officers would accept commissions or remain on active duty as long if the opportunity was presented again.

In contrast to their male counterparts, all female subdivisions preferred Plan B at least as well as alternative Plan C. This difference may result from labor market and career uncertainties. Although differences exist between current male and female junior respondent retention propensities, these become indistinguishable as the respondents gain seniority. After an initial period of adjustment to service life, women

may perceive the military superior to civilian positions both in equitable opportunities and career development.

Officer summary validation data is presented in Table 21 and follows the same general patterns noted and discussed in the enlisted evaluation. The percentage of respondents indicating increases in retention propensity under Plan C and who also preferred Plan C to current retirement policies range from 69 percent in the 01-02 sample, to 38 percent in the 05 respondent group. Percentages under Plan B range from 60 to 09 percent preference for the proposed plan. Conversely, those who demonstrated a tendency to serve fewer years under alternative retirement plans, still exhibited group percentage preferences of 33 to 15 percent for the new plans.

These patterns, although not as diverse, are similar to trends discovered in the enlisted analysis. Here again, external factors are assumed to influence retention decisions, regardless of preference for either retirement plan. The previously discussed resistance to or fear of perceived change, and the objective nature of the survey question may also explain the contradictions in retirement plan preference by those respondents indicating an increased number of years service under a proposed plan.

This analysis of officer retention propensities uncovers several important factors affecting the implementation of an alternative retirement system. With the exception of junior officers, the majority of retention propensities are negative.

However, several subdivisions of officer grades 01-02, particularly females, indicate retention propensities at least as good and in some cases higher than current intentions. If the establishment of a new military retirement system was implemented, senior personnel would most likely be given the option of remaining on active duty under the old system. The forecasting of future officer retention propensities from today's senior officers is not statistically feasible. Assuming new retirement plans would grandfather senior officers, their indicated lower retention propensities could be ignored. There is no indication that present young officers will follow the identical retention patterns and trends expressed by their seniors. The fact that junior officer retention propensities under proposed alternative retirement plans are at least as good or better than current intentions may indicate a future increase in the total officer population base. This is an important consideration when determining the composition of defense force structure and future manpower requirements.

Table 21
OFFICER VALIDATION

	Years of Service Change	N	Percent Prefer New Plan	Percent Prefer Current
01-02 Plan B	Increase	182	60	40
	Decrease	454	23	77
01-02 Plan C	Increase	284	69	31
	Decrease	330	32	68
03 Plan B	Increase	177	47	53
	Decrease	508	19	81
03 Plan C	Increase	291	58	42
	Decrease	388	30	70
04 Plan B	Increase	98	10	90
	Decrease	461	07	93
04 Plan C	Increase	137	39	61
	Decrease	424	21	79
05 Plan B	Increase	68	09	91
	Decrease	363	03	97
05 Plan C	Increase	102	38	62
	Decrease	279	15	85
06 Plan B	Increase	11	09	91
	Decrease	177	04	96
06 Plan C	Increase	35	51	49
	Decrease	167	33	67

VII. OFFICER ANALYSIS

RETIREMENT PLAN B BY PRIOR RESIDENCE CLASSIFICATION

A. THE SAMPLE

This analysis applies the methodology previously used in the enlisted retention propensity analysis by prior residence classifications (Chapter V). As with the Enlisted Survey Questionnaire, one of the two officer forms also permits analysis of retention propensity by prior residence classification. Retirement Plan B is the proposed alternative to the current system and the question format and residence categorization are identical to that utilized in the enlisted analysis (City = Cy, Town = T, and Rural = R).

The total sample consisted of 2,547 officers, with 853, 499, and 1,195 respondents divided between the city, town, and rural categories respectively. Specific sample sizes for each subdivision are provided in Table 22.

B. THE RESULTS

Generalized findings for individual sample groups are summarized as follows:

- 1) Current intentions and expected years service surpassed all retention propensities demonstrated by prior residence classification under Retirement Plan B. All sample groups indicated a lower propensity to remain on active duty under Plan B. As before, these tests were significant at the .01 level. (Figures 35-39)

- 2) The results of hypothesis testing between residence classification categories indicated no statistically significant differences between each of the five sample groups.

Graph coding procedures are identical to those described in Chapter V. Retention percentage increases and decreases for specific years under alternative Retirement Plan B are listed in Table 23.

Table 22

OFFICER SAMPLE GROUPS AND SAMPLE SIZES
BY PRIOR RESIDENCE CLASSIFICATION

01-02	n
Aggregate	661
City	239
Town	141
Rural	281
03	n
Aggregate	699
City	247
Town	140
Rural	312
04	n
Aggregate	574
City	167
Town	111
Rural	296
05	n
Aggregate	413
City	131
Town	72
Rural	210
06	n
Aggregate	200
City	69
Town	35
Rural	96

Figure 35 - AGGREGATE 01-02 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

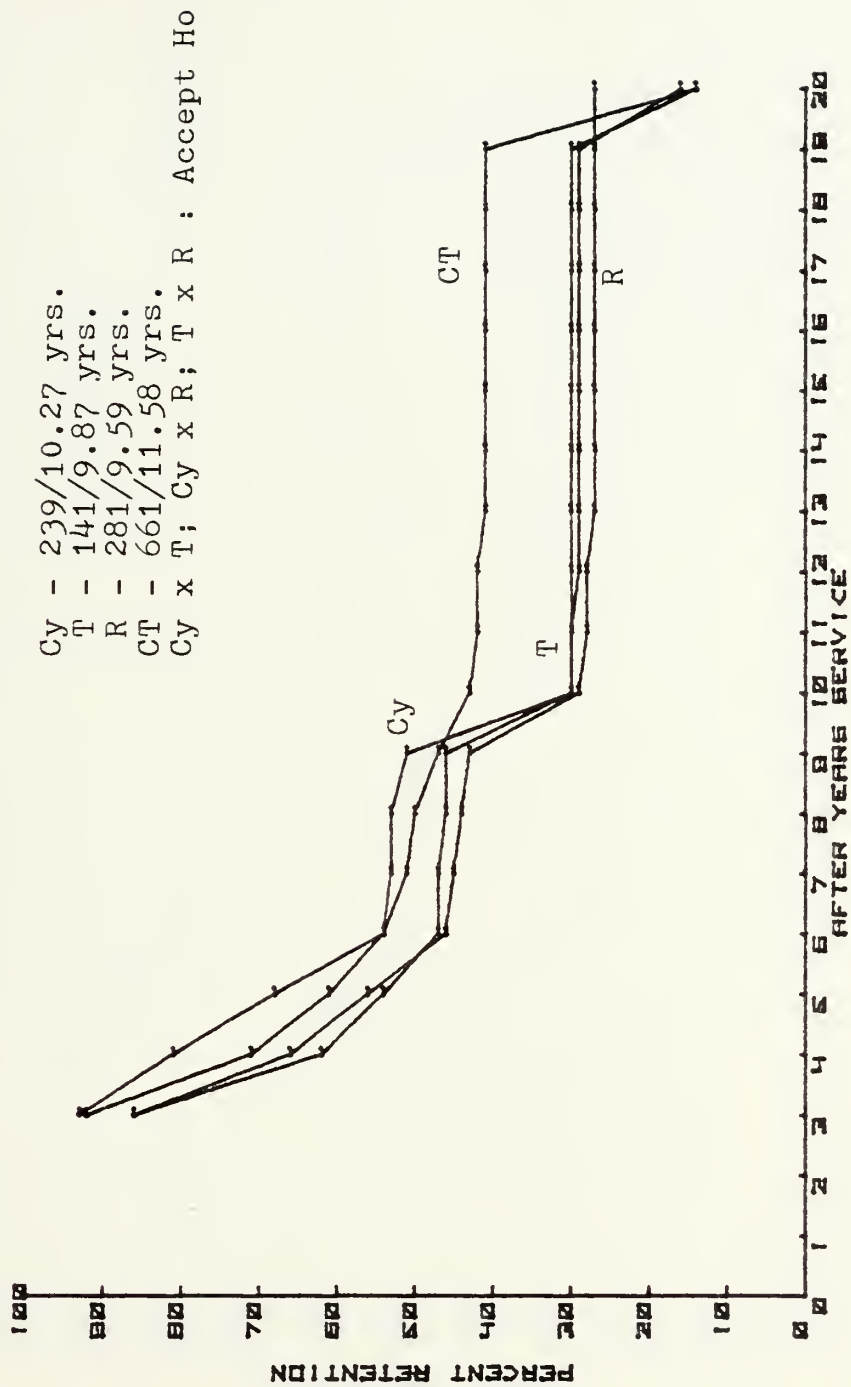


Figure 36 - AGGREGATE 03 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

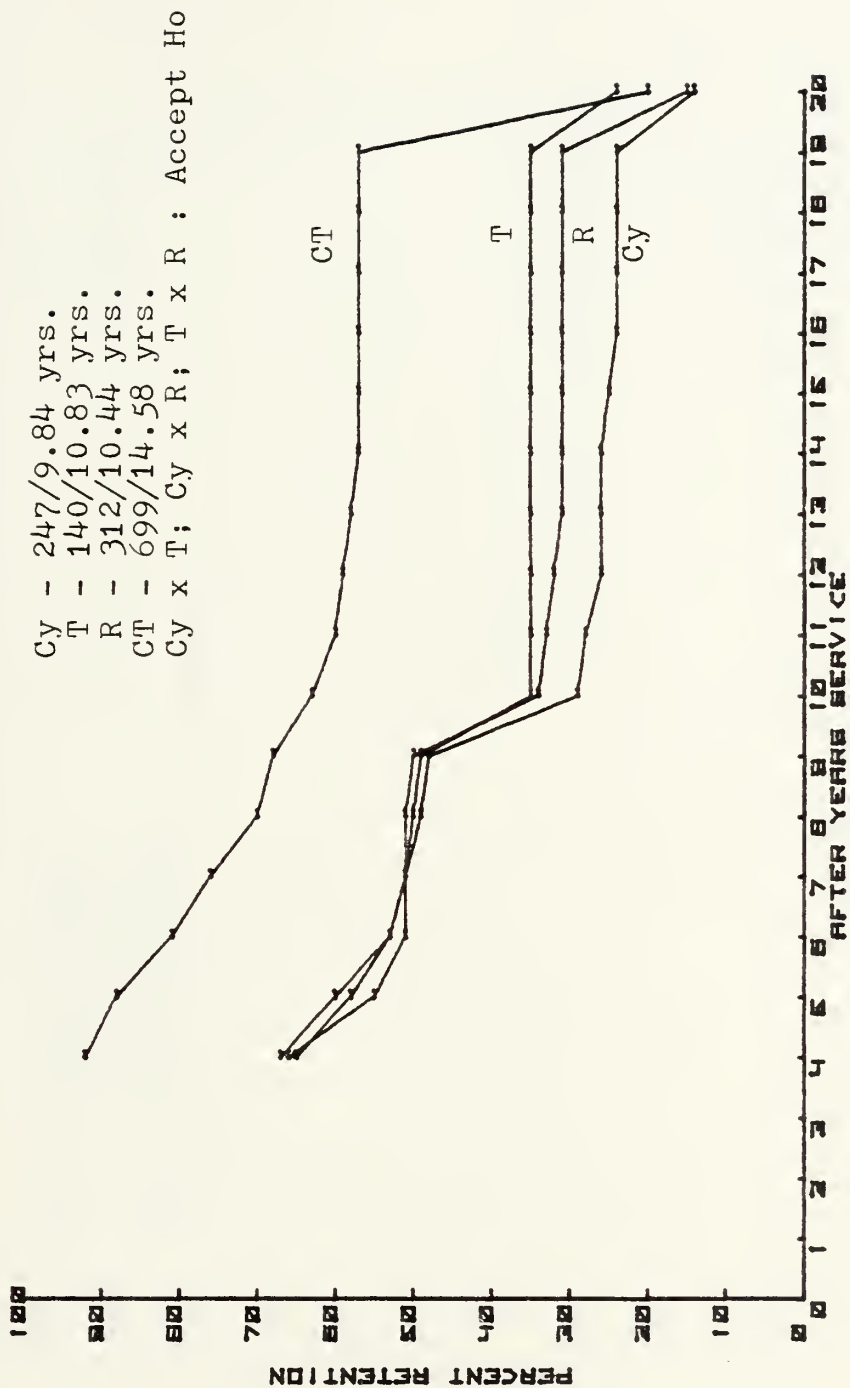


Figure 37 - AGGREGATE 04 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

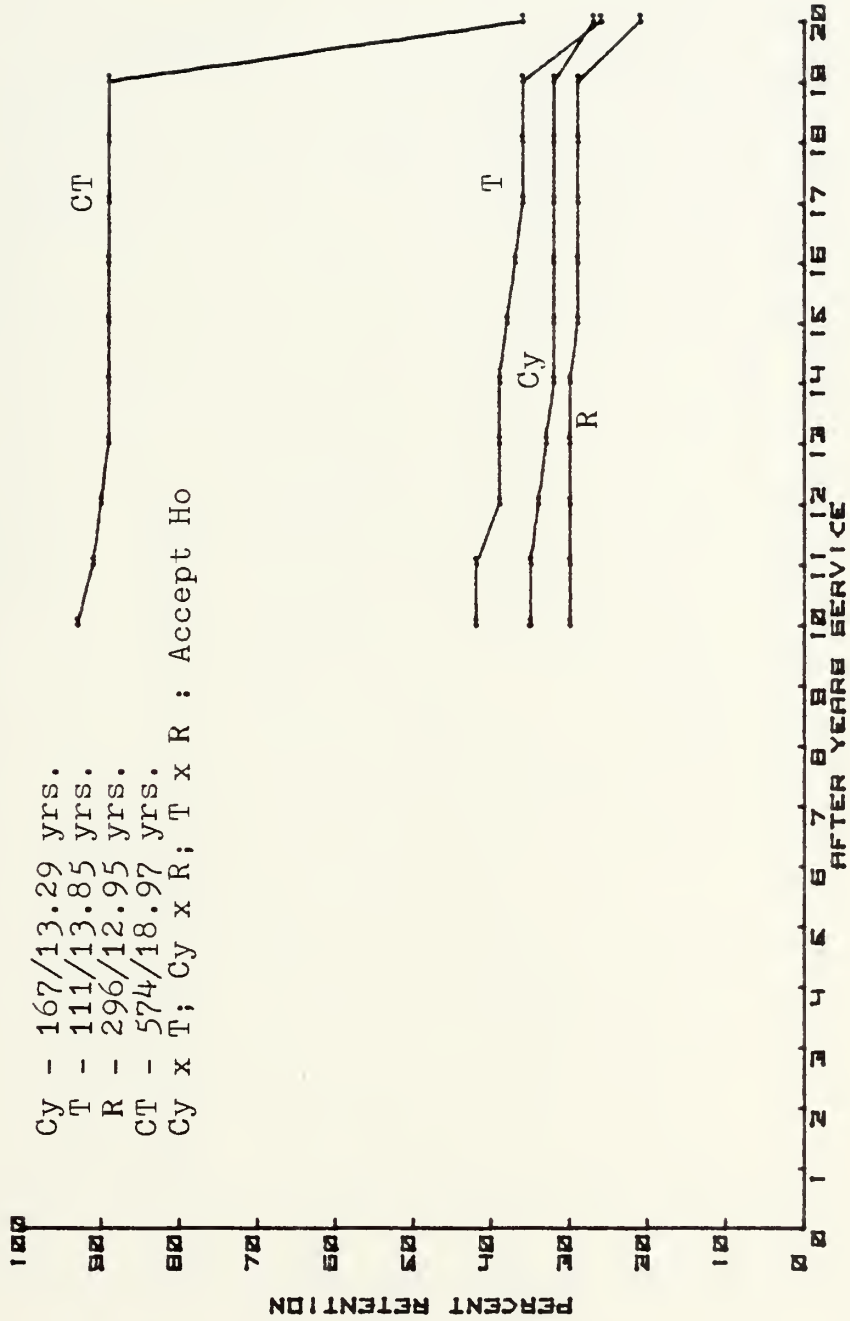


Figure 38 - AGGREGATE 05 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

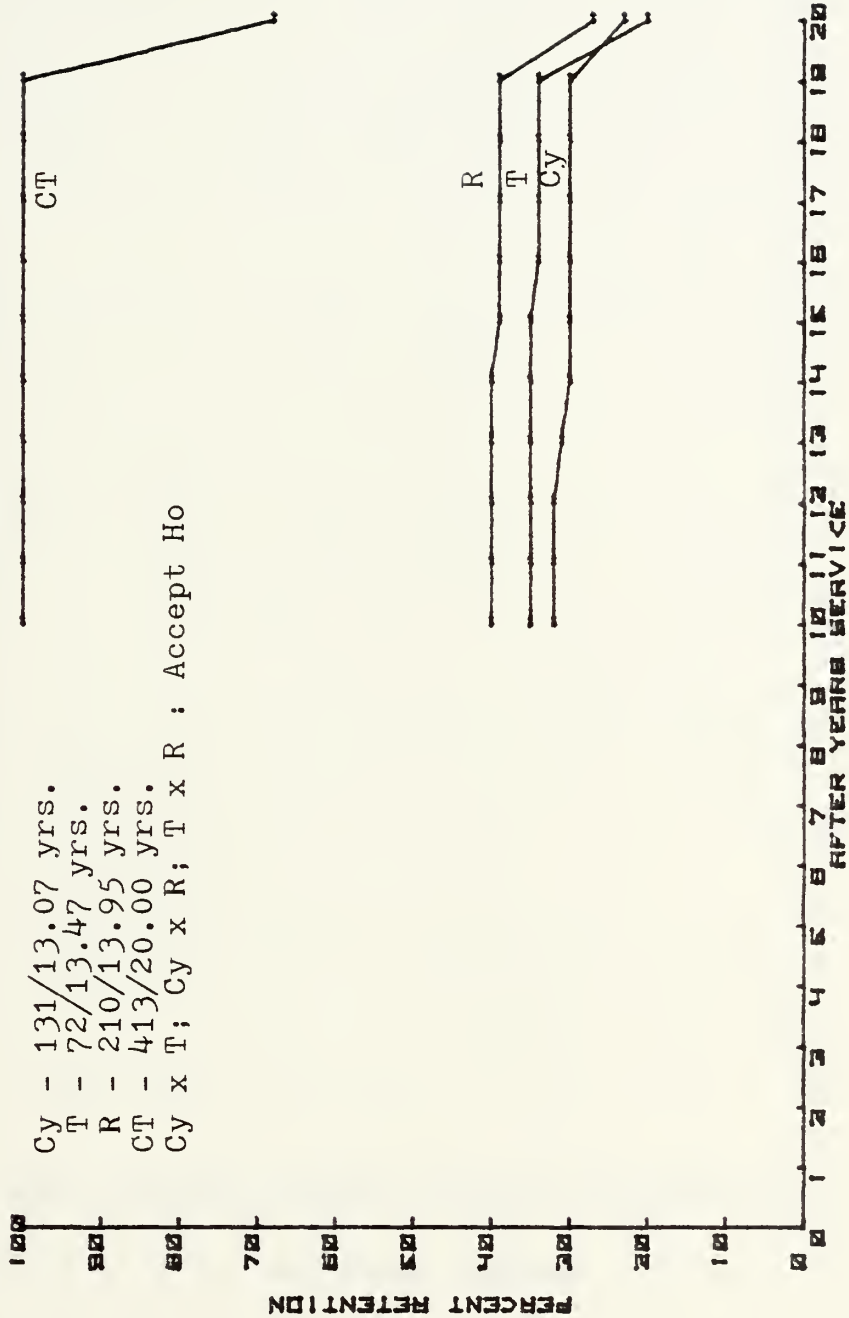


Figure 39 - AGGREGATE 06 INTENDED RETENTION PROPENSITIES
BY PRIOR RESIDENCE CLASSIFICATION

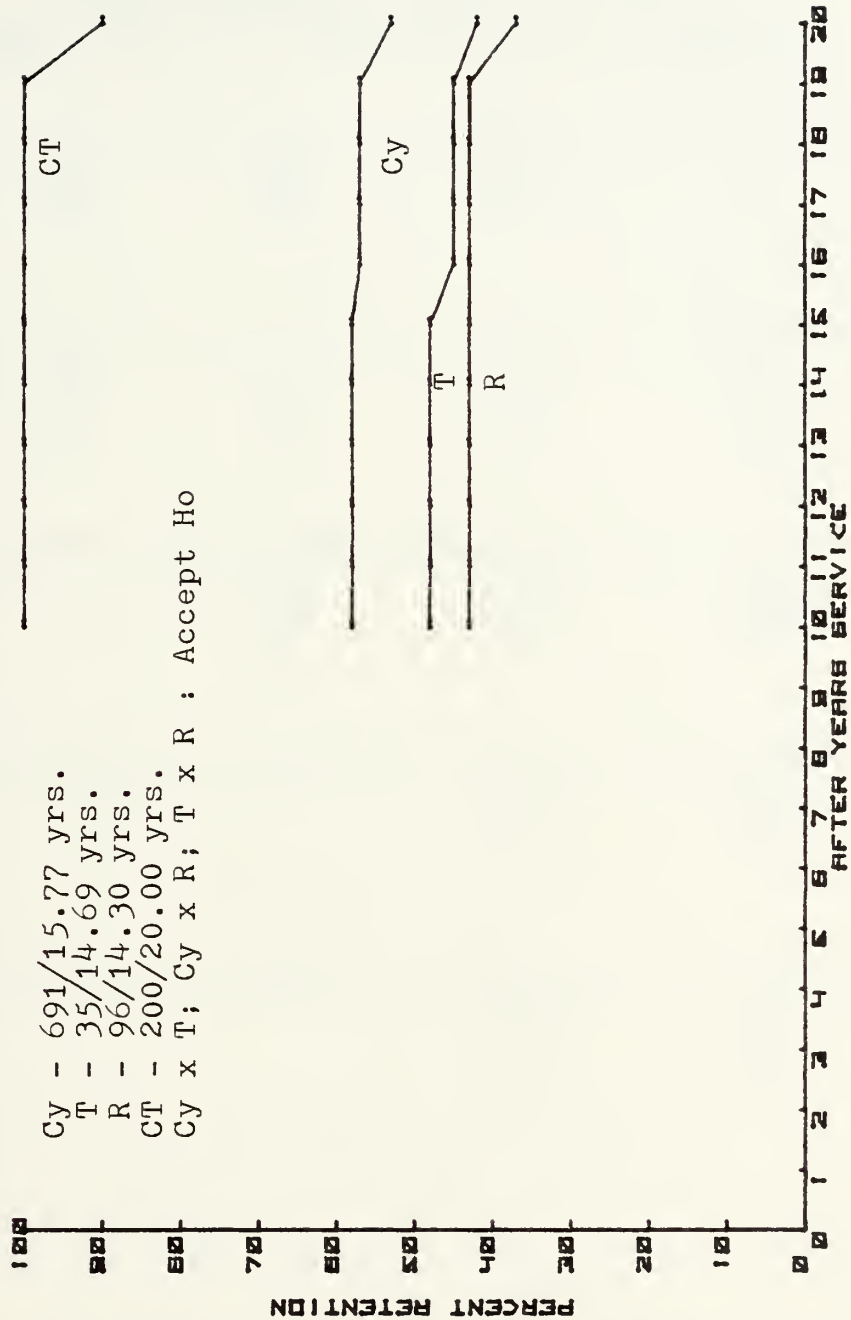


Table 23

OFFICER RESIDENCE CLASSIFICATION
RETENTION PERCENT INCREASE/DECREASE BY ALTERNATIVE
RETIREMENT PLAN B AT SELECTED YEARS OF SERVICE*

01-02	8 yr.	12 yr.	16 yr.	20+ yr.
City	06	(31)	(29)	14
Town	(08)	(29)	(27)	0
Rural	(12)	(33)	(34)	(14)
03	8 yr.	12 yr.	16 yr.	20+ yr.
City	(30)	(56)	(58)	(30)
Town	(29)	(41)	(39)	20
Rural	(27)	(46)	(46)	(25)
04	8 yr.	12 yr.	16 yr.	20+ yr.
City		(62)	(64)	(42)
Town		(57)	(58)	(28)
Rural		(66)	(67)	(42)
05	8 yr.	12 yr.	16 yr.	20+ yr.
City			(70)	(66)
Town			(67)	(71)
Rural			(61)	(60)
06	8 yr.	12 yr.	16 yr.	20+ yr.
City			(43)	(41)
Town			(55)	(53)
Rural			(57)	(59)

*The percentage changes in the table are computed for each of Plan B and C using the current intended years of service as the baseline.

C. CONCLUSIONS

The officer respondents again express a definite propensity to serve fewer years active duty under alternative Retirement Plan B than under current conditions. A substantial number of officers would not rejoin the service if given the opportunity to begin careers over again under either retirement plan. This propensity not to rejoin the service can not be specifically related to a like or dislike of the proposed retirement system, but may be a result of family separation, wage dissatisfaction, working conditions, and attractiveness and eligibility of civilian job opportunities. These conclusions are similar to those discussed and verified with previous analysis of overall officer retention propensities under Retirement Plans B and C.

Retention propensities determined by prior residence classification were also statistically tested within the sample divisions. These differences in expected years service proved insignificant at the .01 level in each of 15 comparisons. This contrasts somewhat to the enlisted analysis by residence classification where several possible patterns or trends were found to exist. The fact that no significant differences existed within officer sample groups may be attributed to variables such as source programs, the maturing experience and exposure to college life, and the extensive training received prior to entering active duty.

The majority of enlistees move directly from the home environment through basic training and enter active duty in a relatively short period of time. If retention propensities can be linked to residence classification and prior home environment, any meaningful difference between enlisted respondents would tend to emerge after this short indoctrination and entry into service life. Officers, on the other hand, experience lengthy periods of education and training prior to the actual performance of military duties. This four to six year period may serve to equalize prior to entrance into the Armed Forces, any existing differences and influences of background and youthful familiarities.

Although direct comparisons are not possible, preliminary evidence supports the existence of similar effects when contrasting both officer and enlisted respondents by prior residence categorization. Critical differences in hypothesis tests were considerably smaller for the enlisted respondents than officer personnel, indicating the possible existence of retention patterns between samples. These dissimilarities were not evident with the officer samples. Additional research is necessary to confirm these potential dissimilarities in retention propensities in order to achieve the required retention impact dictated by the implementation of an alternative retirement plan.

VIII. OFFICER AND ENLISTED
ANALYSIS BY LENGTH OF SERVICE CELLS

A. THE SAMPLE

The following analysis presents a direct comparison of enlisted and officer retention propensities under an identical proposed alternative retirement system. Retirement Plan B was utilized for this comparison with separate officer and enlisted samples reconstructed from the original data bank using length of service (LOS) categories as primary sample divisions. Respondents were categorized by the five LOS cells listed below.

Length of Service

I.	1 - 4 yrs.	IV.	13 - 16 yrs.
II.	5 - 8 yrs.	V.	17 - 20 yrs. +
III.	9 - 12 yrs.		

Although several suggestive comparisons and relationships have been discussed, all previous analysis of retention propensities was conducted within officer and enlisted classifications respectively. The procedure utilized in this chapter attempts to relate officer and enlisted retention propensities with the exclusion of possible rank, grade, and billet biases. Officer and enlisted respondent sample sizes are provided in Table 24.

B. THE RESULTS

Generalized findings for officer and enlisted LOS cells are noted below.

- 1) Current officer intentions exceed current enlisted retention propensities in the first two LOS categories. There is no statistically significant difference in expected years service between the two communities in the three remaining LOS cells. (Figures 40, 41)
- 2) Officer retention propensities under alternative Retirement Plan B are at least as good and generally exceed those propensities indicated by enlisted respondents under Plan B. (Figures 40-44)
- 3) When comparing enlisted and officer retention propensity under Plan B to that expressed under current conditions, both respondent groups demonstrate significant reductions in expected years service in all LOS divisions except LOS cell I. Cell I junior enlisted indicate an increase of 4.95 years service significant at the .01 level. Junior officers in the LOS I category exhibit no discernable difference in expected years service between current intentions and those expressed after exposure to Plan B. (Figure 40)
- 4) As a percentage of current intentions, reductions in expected years service under Plan B generally occur at an increasing rate with seniority and are larger with the enlisted respondents when compared to officer personnel. Reductions range from 25 percent to 40 percent with enlisted and from 15 to 33 percent for officers. (Figures 40-44)

All findings are illustrated in graphic form in Figures 40 through 44. Standardized graph coding procedures are again used in the following format:

<u>Sample Group</u>	<u>Sample Size</u>	<u>Expected No. Intended Years Service</u>
CTe (Current Enlisted)	1506	5.18 yrs.
CTo (Current Officer)	585	9.06 yrs.
Be (Plan B Enlisted)	1506	10.13 yrs.
Bo (Plan B Officers)	585	9.59 yrs.

Table 24

OFFICER AND ENLISTED SAMPLE GROUPS AND SAMPLE SIZES
BY LOS CATEGORIES I - V

LOS 1-4	n
Aggregate	2091
Officers	585
Enlisted	1506
LOS 5-8	n
Aggregate	1724
Officers	491
Enlisted	1233
LOS 9-12	n
Aggregate	1088
Officers	426
Enlisted	662
LOS 13-16	n
Aggregate	854
Officers	318
Enlisted	536
LOS 17-20	n
Aggregate	1383
Officers	664
Enlisted	719

Figure 40 - OFFICER AND ENLISTED INTENDED RETENTION
PROPSITIES BY LOS CATEGORY I

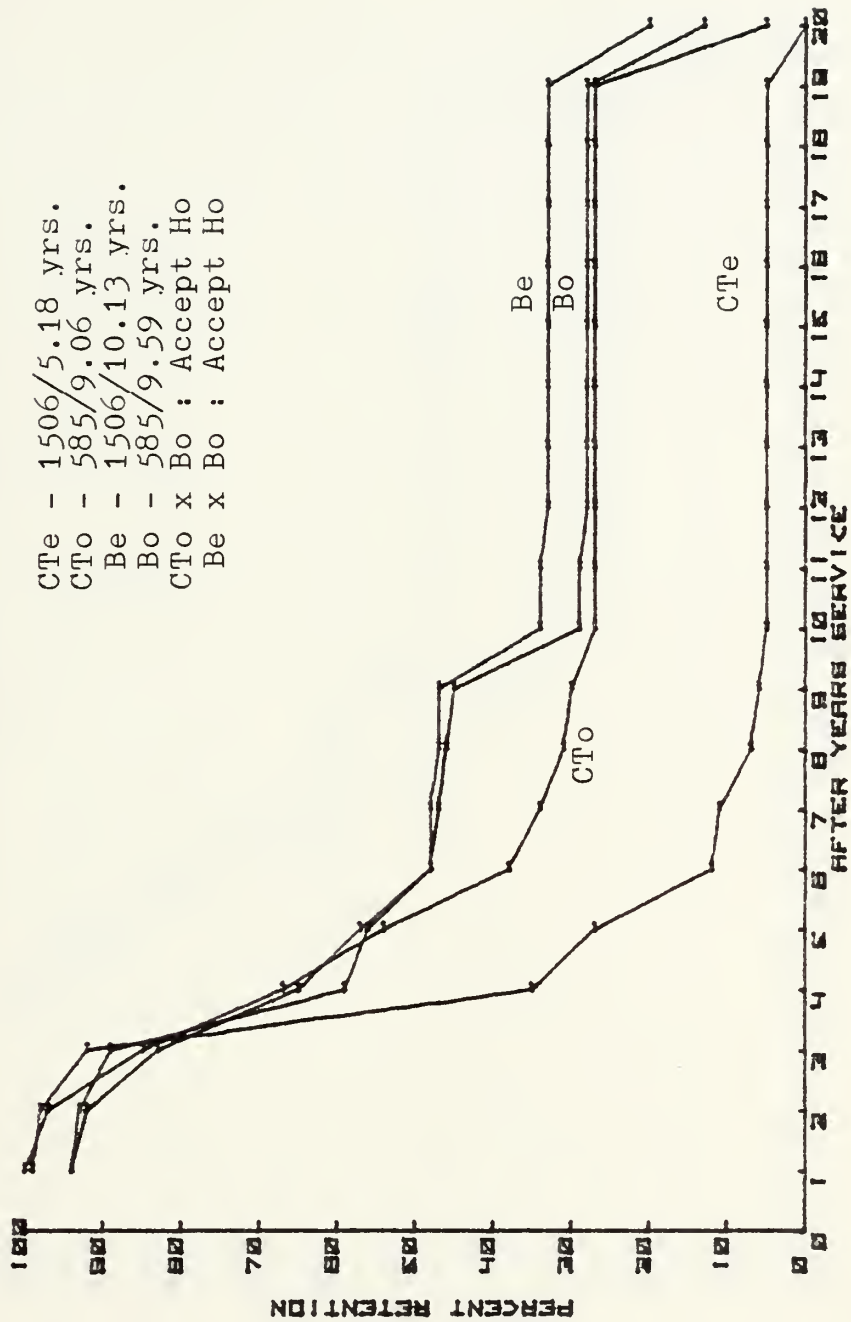


Figure 41 - OFFICER AND ENLISTED INTENDED RETENTION
PROPERTIES BY LOS CATEGORY II

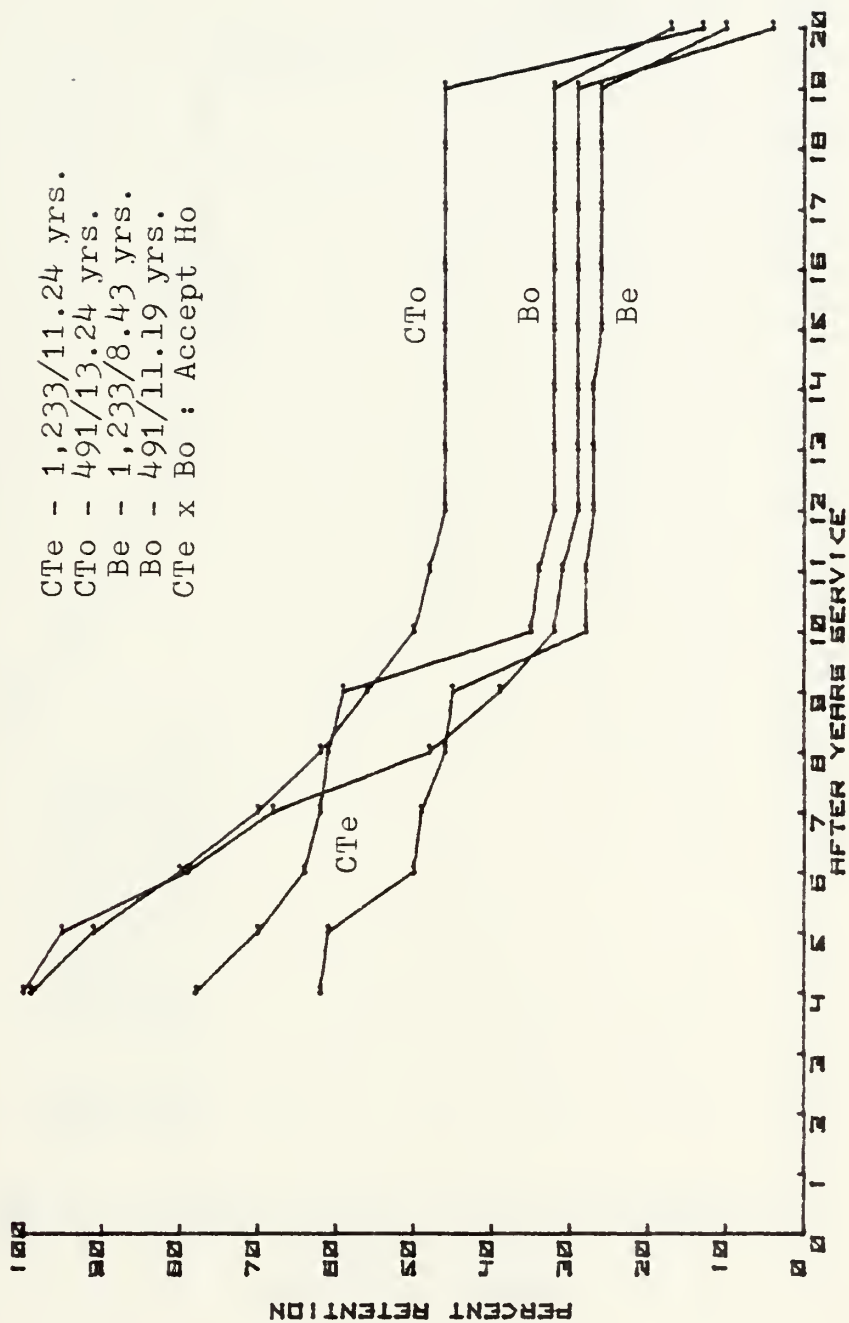


Figure 42 - OFFICER AND ENLISTED INTENDED RETENTION
PROPERTIES BY LOS CATEGORY III

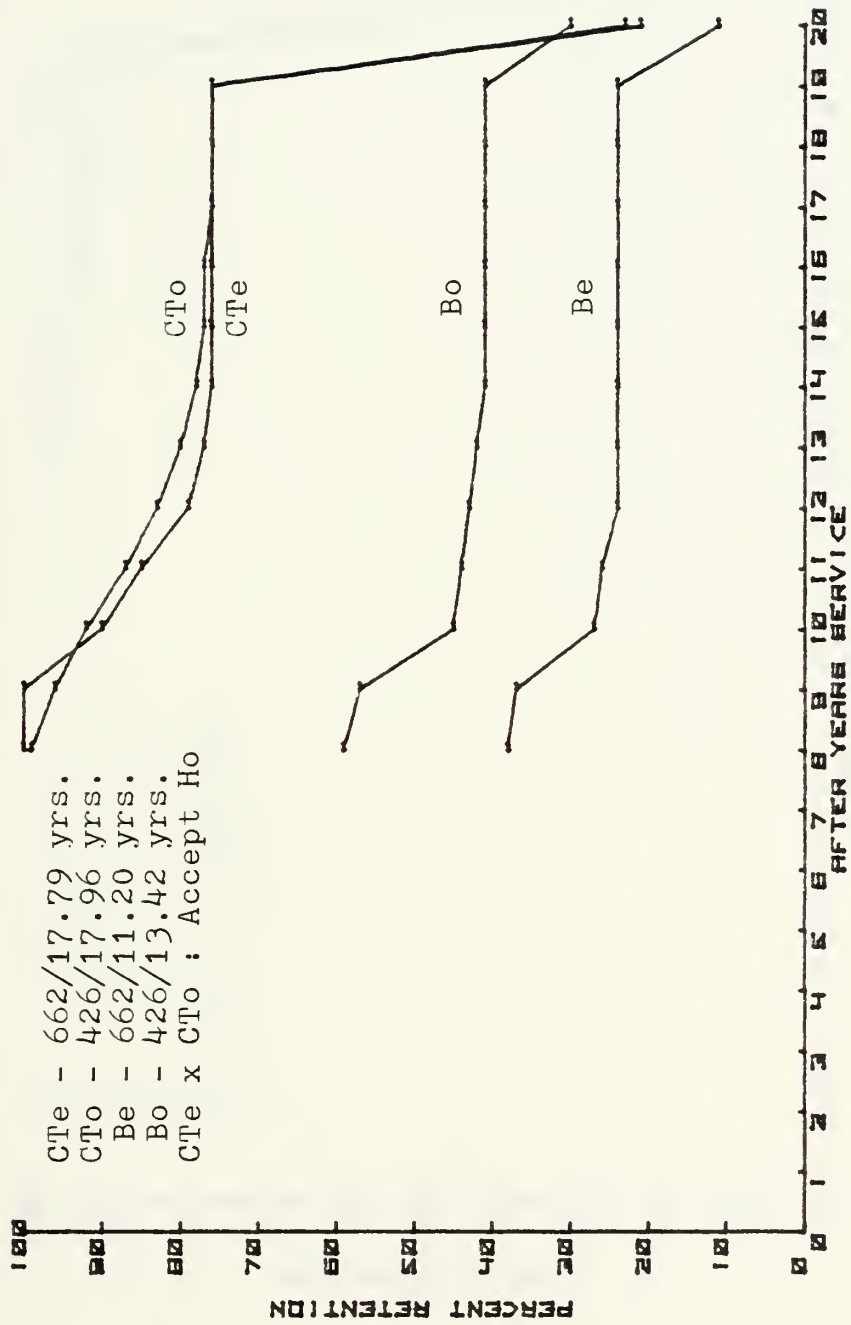


Figure 43 - OFFICER AND ENLISTED RETENTION PROPENSITIES
BY LOS CATEGORY IV

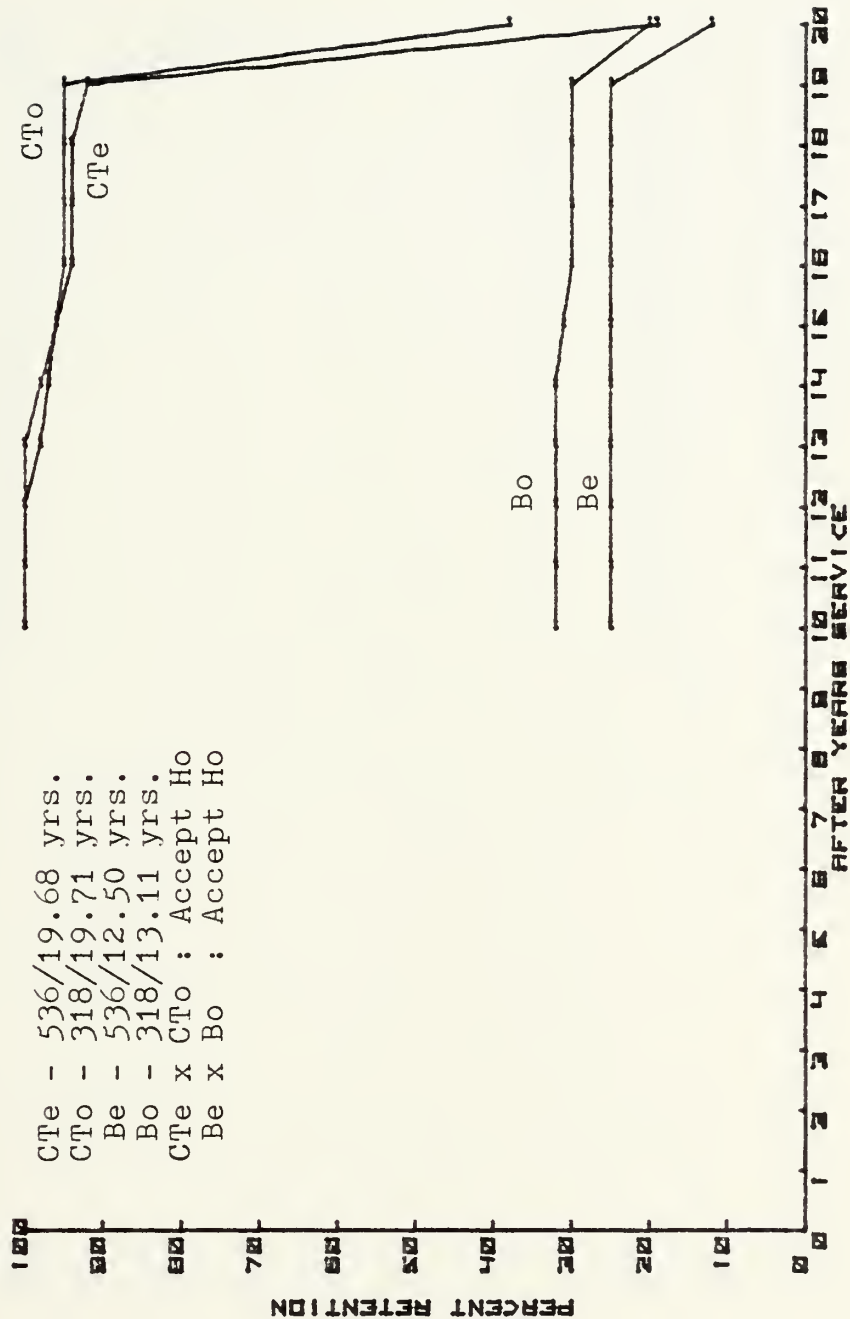
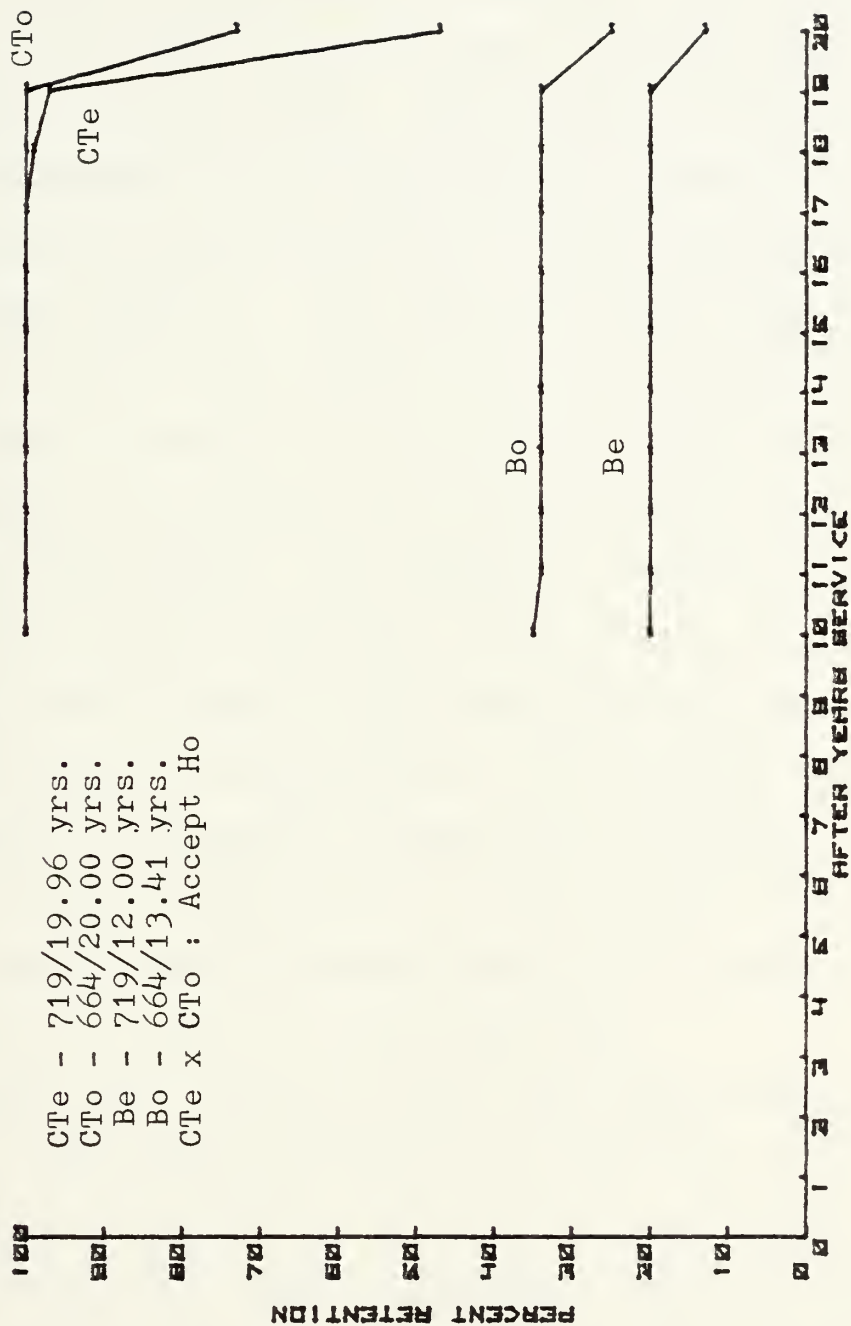


Figure 44 - OFFICER AND ENLISTED RETENTION PROPENSITIES
BY LOS CATEGORY V



C. CONCLUSIONS

As discovered with earlier officer and enlisted evaluations (Chapters IV and VI), alternative Retirement Plan B fails to increase 20 year career intentions when considered as a substitute for the current system. Whether the indicated decreases in retention propensities are specifically related to the compensation payments proposed by Plan B is only speculation without further analysis. The effects of other variables must be considered before final conclusions can be formulated.

What should be noted from the analysis by LOS categories are the contrasts and differences exhibited between the officer and enlisted respondents. The increase in retention propensity demonstrated by junior respondents, particularly the young enlisted, has been a common result throughout the entire analysis. These initial positive changes may be influenced by factors such as incurred obligations and service commitment, limited knowledge of the realities and very often demanding military life, the need for service funded training and education, and ineligibility for desired civilian positions.

Perhaps the most important result from this analysis is the difference in percentage reductions of officer and enlisted force retention propensities. As previously mentioned, retention impacts upon total force, segregated communities, and smaller personnel stratifications must be researched prior to the implementation of any alternative retirement system. A gain in one area may have disastrous effects in others, thus

resulting in overall personnel reductions and the inability to accomplish specified missions and goals. Additional conclusions and recommendations are discussed in the following chapter.

IX. SUMMARY AND RECOMMENDATIONS

The purpose of this thesis has been to investigate the effects of several possible replacement retirement plans on an individual's expressed propensity to remain on active duty. This was accomplished in five major phases by comparing the intended retention in individual sample groups both under current retirement policy conditions and after exposure to alternative retirement plans. These phases included separate enlisted and officer analysis, prior residence classification analysis, and joint officer and enlisted analysis by length of service categories.

Respondent research data and alternative retirement plans were utilized from the 1978 DoD Survey of Officers and Enlisted Personnel. The entire sample consisted of over 9,000 enlisted and 5,000 officer personnel. One of three distinct retirement systems were proposed to each survey respondent. In total, the alternative retirement systems contained many characteristics of past and possible future replacement retirement plans. These features included lump sum or severance bonuses, vested annuities for ten or more years of service, and varied rates of pro-rated retirement annuities receivable for full service careers.

The enlisted and officer samples were initially stratified by grade and rank for the analysis. Junior respondents were also combined in each community to facilitate homogeneous length

of service divisions for behavioral analysis. Additional sample subdivisions were formulated by race and sex categorization when sufficient sample sizes were available.

Statistical procedures primarily consisted of the computation of the average intended number of years service for each sample group. Statistical validation to support the indicated preference of one retirement plan over another was accomplished with an upper-tailed hypothesis test for comparing two means. All tests were conducted at the .01 level of significance.

Enlisted respondents compared Plans A and B and officer personnel were exposed to Plans B and C. Although major officer and enlisted phases of the analysis were conducted independently, both respondent communities demonstrated an overwhelming preference for alternative retirement plans of similar structure and format (Plans A and C). Retirement Plans A and C differ only in the amount and rate of increase of severance bonuses. Plan B excludes severance bonuses but includes retirement annuities receivable after 20 years service. Annuities under Plans A and C are not receivable until the ages of 55-65.

Although Plans A and C generally produced higher retention propensities than Plan B, these propensities exceeded current retention intentions in only the junior enlisted and officer samples (E1-E3, E4, and O1-O2). All other sample analysis resulted in decreased expected years service when compared to current intentions. This indicates the simple relationship of

net present values of cash flows to the time horizon of those flows as well as, perhaps, a desire of the more senior career people to obtain a return to sunk cost. In general, preference for the current policy increased the closer a group was to retirement. Alternatively, indicated decreases of service under new retirement plans by the senior samples may reveal adverse feelings toward military service and a desire to shorten their active duty or even not to enlist if the choice could be made again. External variables and peculiarities of service life may emerge as controlling reasons for decreased retention propensities. The positive increase in retention propensities of junior personnel may also be explained by incurred obligations, government funded training and education, and the desire to acquire technical skills applicable in civilian labor markets at higher wages.

When a degree of preference and positive change from current intentions was demonstrated for Plan B, it usually occurred in the female or black subdivisions. Female officers expressed virtually no difference in retention propensities when comparing Plans B and C, however, junior enlisted females did indicate large positive changes when exposed to Plan B. This preference towards a more career oriented retirement plan is possibly related to the prevalence of existing job discrimination and limited employment opportunities in the civilian sector. If the above assumption is valid, a higher percentage of minority groups may be strongly motivated towards enlisting and serving

a full military career. More non-white males should not present a problem, however, the existence of large numbers of females may require the re-evaluation of traditional male roles and total force structure with respect to shipboard manning and the philosophy of combat arms.

Retention propensity analysis by prior residence classification was also conducted within the separate officer and enlisted samples (respondent residence at age 16). Analysis was accomplished by classifying respondents into one of three residence categories which depended upon population size. These categories included large city (over 250,000), medium-sized city (50,000 to 250,000), and small city or town (under 50,000). Results of the analysis were primarily inconclusive, identifying only possible trends in the enlisted evaluation and determining insignificant differences in expected years service of the officer samples.

Several factors may have influenced both the officer and enlisted analysis. First, respondents who only lived in their particular residence category for a short time would tend to bias results. Earlier and lengthy periods of residence in different categorical locations might foster unique cultural influences not associated with the residence classification at age 16. Other variables such as ease of adaptability, degree of satisfaction with military life, and individual success or failure may also serve as dominant motivating factors. Finally, the non-existent differences in the officer samples may be a

result of long training periods and college exposure, tending to equalize or compensate for environmental differences prior to commissioning and active duty status. This is in direct contrast to the relatively short time span enlistees spend from actual recruitment to initial billet assignment. Further conclusions and results necessitate additional analysis which should include, but not be limited to the above mentioned variables.

Investigation and comparison of retention propensities by enlisted and officer length of service categories uncovered significant results which must be considered prior to the institution of an alternative retirement system. Plan B was also utilized for this analysis and was generally unsuccessful as an incentive to increase retention propensities. As expected, changes in total expected years service of senior personnel were negative when compared against current intentions. However and most importantly, positive increases in retention propensity occurred with junior respondents.

The most significant policy implications from this analysis are the potential increases in retention propensities of junior enlisted and officer personnel. If implementation of a proposed retirement system occurred, it is assumed that senior personnel would be given the option to choose between the current plan and the alternative system. The attitudes and retention propensities of today's senior servicemen and women do not necessarily reflect those of potential enlistees and

officers. Thus, the decreased retention propensities exhibited by senior personnel under new retirement systems may have little relation to retention propensities of potential service accessions. Although specific forecasting of future retention rates is not the intent of this research, it may be possible to equate intended retention propensities of present junior service personnel with those of potential service accessions with similar background, age, and education.

The fact that junior officer and enlisted retention propensities under these proposed alternative retirement plans are generally as good or better than current intentions may indicate a future increase in the total officer and enlisted population base. This increase would serve to benefit the Armed Forces in several ways. First, this growth in service population base would provide a foundation for a more career oriented force. Although this analysis demonstrates a shift of high attrition patterns from end of initial obligation time frames to the 10 year payoff point, it also reveals an established trend to retain a higher percentage of respondents between 10 and 20 years service. A significant result of such a change in the career force mix would be to increase the productivity of manpower resources at substantial cost savings [Ref. 15]. This would additionally increase the manpower resources available for selection to billet assignments and promotion, possibly yielding opportunities for increased selection and promotion criteria.

Increasing the service personnel population base would also positively affect existing retention problems with junior and mid-career petty officers and middle managers. Improvements in school assignment, billet choice, tour length, and sea-shore rotation are potential benefits. This growth in retention would additionally reduce the quantity of needed accessions and recruiting problems resulting from the declining pool of eligible manpower resources.

Finally, important cost reductions and productivity gains are possible with an increase in first term retention. The military is often criticized for using general training opportunities as inducements for enlistment [Ref. 16]. The general training received by junior service personnel is often utilized in the civilian sector before the Services can recoup their initial investments. This results in major cost deficits and the loss of valuably trained manpower. Higher retention and longer utilization of recently trained personnel will help to alleviate these problems.

Retirement plan analysis restricted to cost/benefit trade-offs and consisting of only direct budgetary considerations will certainly neglect the indirect costs and benefits of retention effects. Analysis of alternative retirement plans must maintain three objectives if implementation is to be successful: present and future direct retirement costs, personnel retention patterns, and total force manpower requirements. The indirect costs and benefits of change in the latter two may substantially

offset the direct costs differences among alternative retirement programs.

Determining force structure requirements and predicting personnel retention patterns is the key not only to retirement system planning, but to any modifications or changes affecting the elements of military compensation. The enactment of a new military retirement system based entirely upon direct retirement cost analysis without full consideration of these changes may have disastrous effects on total force size, structure, and stability in the future.

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